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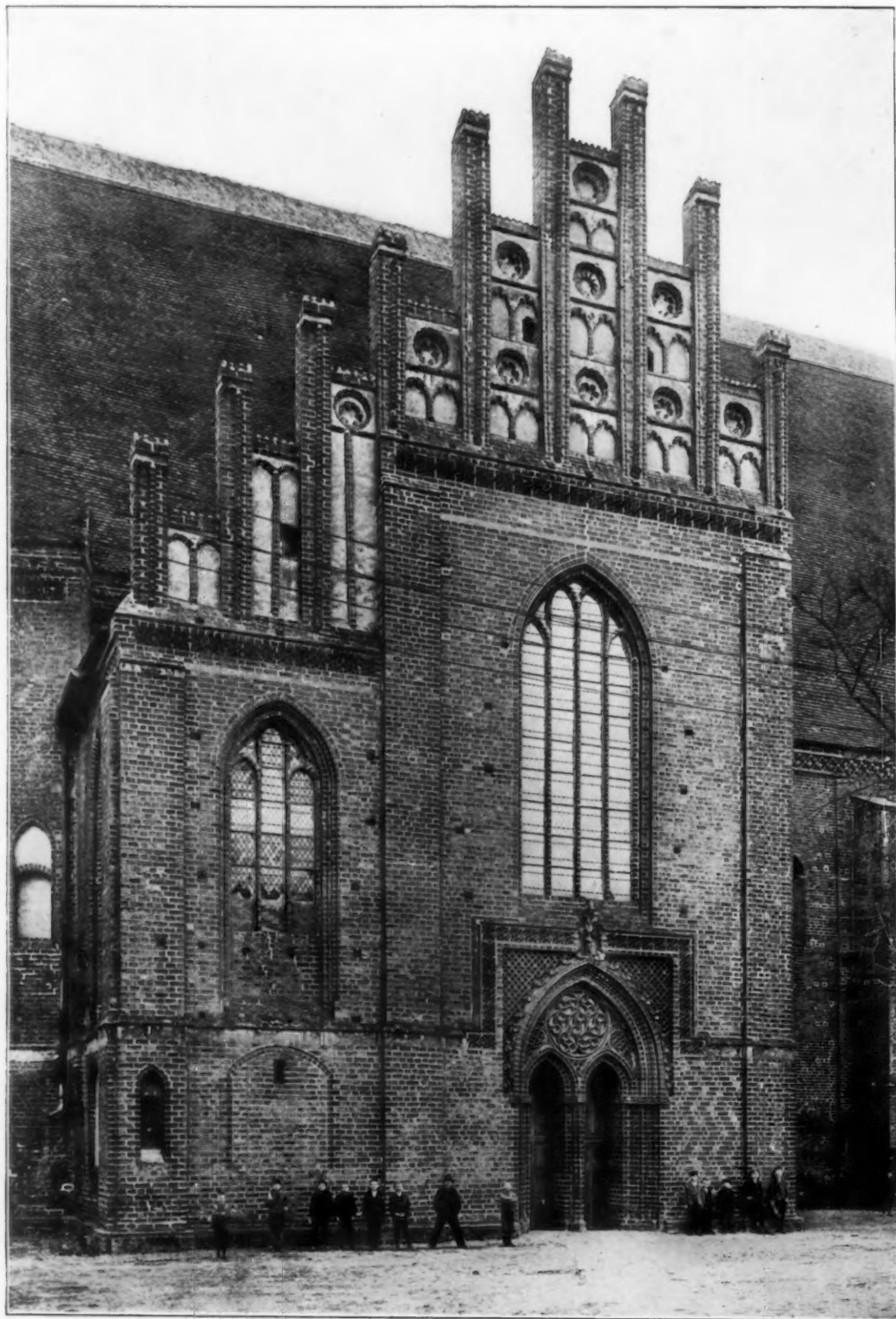
### PLATE ILLUSTRATIONS

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SOUTH TRANSEPT, CHURCH OF ST. STEPHAN, TANGERMÜNDE, GERMANY.

# THE BRICKBUILDER

VOL. 17 NO. 3      DEVOTED TO THE INTERESTS OF ARCHITECTURE IN MATERIALS OF CLAY      MARCH 1908

## The American Theater — IV.

### SIGHT LINES.

BY CLARENCE H. BLACKALL

THE essential condition, which rightly takes precedence over every other consideration in a modern theater, is that every spectator shall have an interrupted view of what is being done upon the stage. There is no excuse for the neglect of this condition, and its importance can hardly be too strongly emphasized, for if the sight lines are faulty, no amount of careful planning otherwise, or of architectural development or adornment, can make the theater any more than a partial success, which is equivalent to a failure. Bad acoustics can be tolerated in these days, when with most shows it really matters so little what is said on the

how variously it has been worked out, and how often it just fails of being a success. It has been the practice of the writer to work out the sight lines first on paper, then to have a scale model constructed, including the curtain opening, the shape of the parquet, and the main constructive cantilevers or girders of the bal-

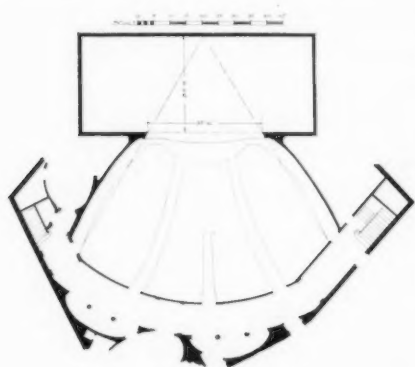


FIG. 1. TYPICAL PLAN.

stage and imperfect heating and ventilation can be remedied after a building has been occupied, but the sight lines are fundamental. They are the very first factors which must be absolutely established in the design of the auditorium, and once incorporated into the building, it becomes practically impossible to change them. It behooves the architect, therefore, to exercise the utmost care in fixing them, to check them constantly on the drawings and during the progress of construction, and to be sure of his facts and of the results. The problem seems, after all, like an easy one, but one has only to compare a dozen or more recent theaters to appreciate

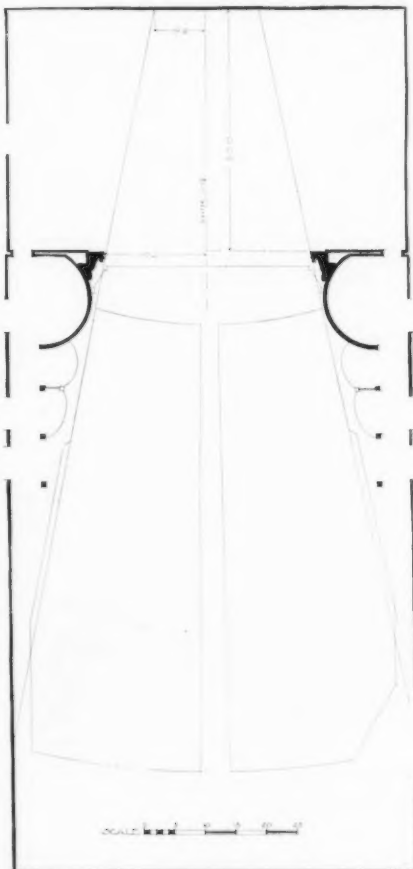


FIG. 3. CHELSEA THEATER.

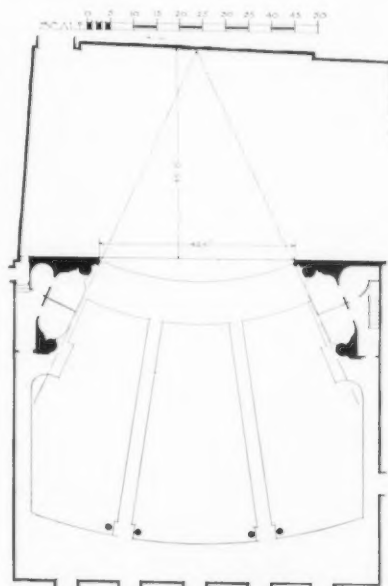


FIG. 2. COLONIAL THEATER, BOSTON.

cony and gallery, the latter being made in tin or galvanized iron. With this constructive model the sight lines are thoroughly tested for every portion of the house, the framing being raised or depressed until just the right lines are assured. This model serves as a basis for grades on the shop drawings of the steel work, and can then be clothed in wax, clay or plaster, in studying the architectural design of the interior. And working in this manner it has often been found that the lines as developed on paper had to be materially modified. The sight lines are really the key to the whole design.



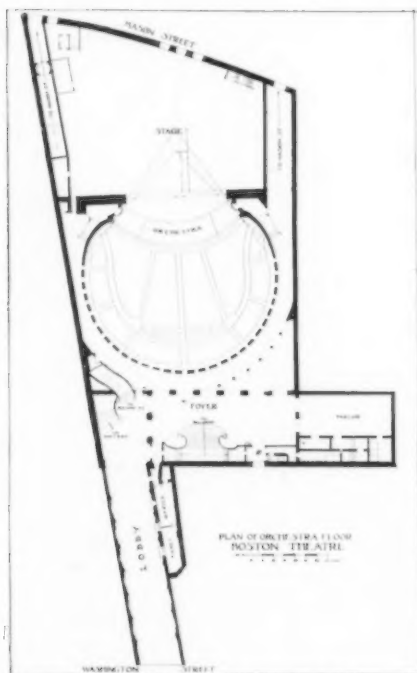


FIG. 4. BOSTON THEATER.

least 30 feet to the rear of the curtain line (Fig. 1); for the ordinary run of theaters, this center should be at least forty-five feet back of the curtain line (Fig. 2), while for grand opera or large, spectacular productions, the lines should be such that from the most extreme side seat a spectator can see at least one-half of the width of the rear of the stage (Fig. 3). As these limiting lines must be applied to each division of the house, it becomes extremely difficult to plan for boxes on the sides with good sight, and only by sacrificing good seats on the parquet are good boxes possible. Box seats are, accordingly, usually the poorest in the house.

It will at once be seen how much the efficient seating capacity of the house is modified by the width of the curtain opening. This width varies from a minimum of twenty-five feet for a vaudeville house to as much as seventy feet, as in the Boston Theater (Fig. 4), and is, at times, affected by the permissible depth of the auditorium and by the width to which the lines can fan out on each side. With sight lines which would be theoretically perfect the bounding lines should be parallel to the center line so that from the extreme side seat a spectator could see the whole depth of the stage the whole width of the curtain opening, but as scenery is invariably set drawing in towards the rear, and as most of the action is confined to the central quarter of the stage, such extreme lines are not necessary, though they have been followed in a few cases in this country, and are often found for the parquet seats only of the theaters in Europe.

First, in plan. Every seat must lie within limiting lines, touching the jambs of the curtain opening and starting from a common center on the longitudinal axis of the hall. If the theater is to be used for light drama or vaudeville, this center should be at

The only practical reason for arranging the seats in curves is to make it a trifle easier to look straight at the front center of the stage. They could perfectly well be put in straight rows parallel to the curtain, as was done quite successfully in the Studebaker Theatre, Chicago. An amphitheatrical arrangement of the seats is preferred, however, on account of its presenting a more compact appearance, and seeming to give a more intimate sense of touch between the actor and the audience, a very desirable condition. This can be carried too far, however, as is usually the case with the European theaters, where the balcony and galleries are cut away back in the center and carried out on the sides in the familiar horseshoe shape, causing a considerable portion of the audience to face each other instead of the stage, and removing the best seats far from the stage. This arrangement has never found favor with us. The illustrations (5, 6, 7, 8, 9, 10)

show some of the most successful balcony lines. The front of gallery is usually cut back more and struck with a lesser radius than the balcony, but in none of the recent theaters is the gallery center in advance of the certain line, more generally being kept to the rear thereof, so as to give flatter curves.

Second, in section. In the ancient amphitheatres the rise of the platforms was so sharp that each spectator could see entirely over the head of the one in front of him. This would be manifestly impractical in a modern hall, and even to so graduate the slope that each spectator would be able to have his eyes even above the level of the head in front of him would speedily bring the rise in the twenty

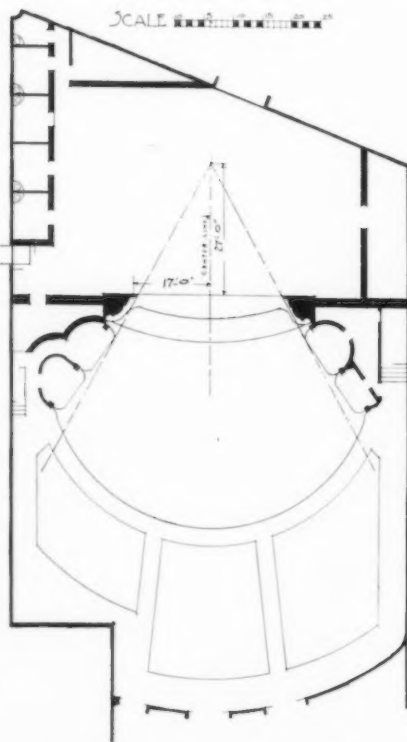


FIG. 5. KEITH'S THEATER, BOSTON.

to twenty-four rows of the average theater so high that galleries would be impractical. A compromise is therefore made. The seats are seldom directly in front of each other in plan. In fact, the aisles are generally deliberately planned so that the seats would be more or

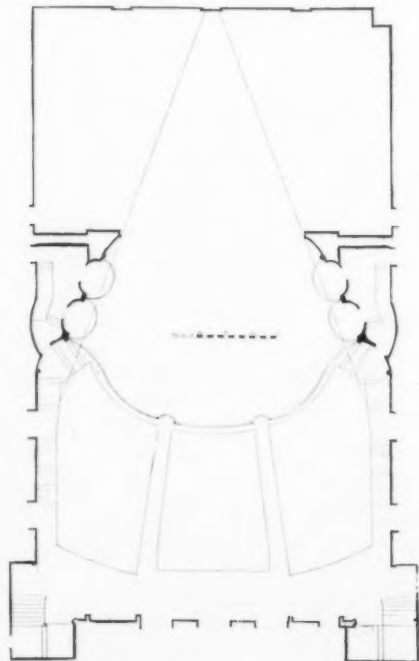
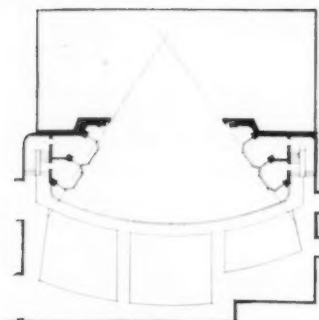
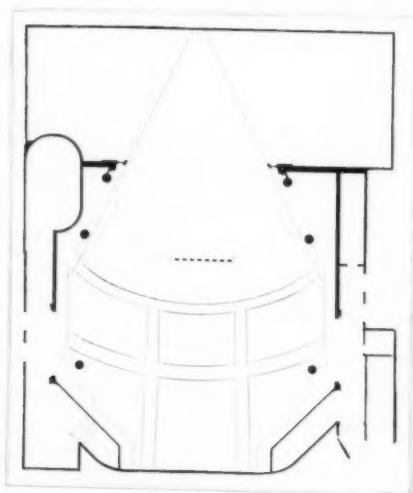


FIG. 6. ILLINOIS THEATER, CHICAGO.



FIG. 7. STUYVESANT THEATER,  
NEW YORK.

less staggered. It is assumed that one can ordinarily look between the heads of at least two rows in front of them. Since the theater hat has disappeared this assumption accords very well with the fact and indeed it is not at all unsafe to assume that one can see between the heads for three rows in front of him. Consequently, if the steppings are so arranged that every fourth row is raised sufficiently to give a clear view over the top of the fourth man's head, the sight lines could be called good ones. It is also not enough to give merely a view of a person standing on the stage. In these days of dancing and stage effects, the feet of the actresses are quite prominent and accordingly the sight lines are taken from the edge of the apron. The difference between the level of the apron and the level of the first row of seats is best taken at three feet. It is sometimes made six inches more, but three feet gives a better line, especially as the hood which

FIG. 8. BALCONY, MAJESTIC THEATER,  
NEW YORK.

covers the footlights rises to a height of about five inches above the level of the stage floor. The eye of a person seated is generally about four feet above the floor. By laying out successive heights, as shown by the diagram (Fig. 11), and drawing the sight lines, a curve is worked out which gives a rise for twenty rows of seats of six feet. To determine the sight lines for the balcony, a line is drawn from the eye of a person seated in the rearmost seat of the orchestra to a point on the curtain line twenty feet above the stage. No portion of the balcony soffit must project within this line. Twenty feet gives an uninterrupted view of a high set scene. Where space is very restricted, this height can be reduced to eighteen feet, but twenty is better. For the lines of the steppings of the balcony the same process can be followed as in the orchestra, but it has been found that a very close approximation would be to make the tangent to the edges of the risers center on a point four feet below the top of the stage at the center. Then to determine the soffit of the gallery a line is drawn from the eye of a person seated at the rearmost row of the balcony to a

point twenty feet above the stage at the rear, and all of the balcony soffit must fall outside of this line. Similarly a tangent for the edges of the gallery risers is drawn from the point four feet below the front of the stage.

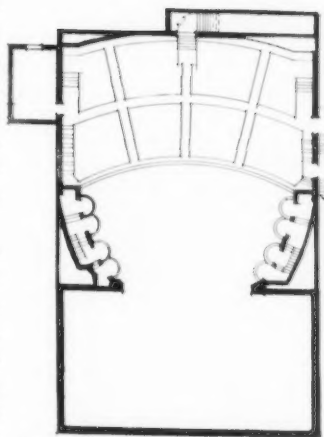
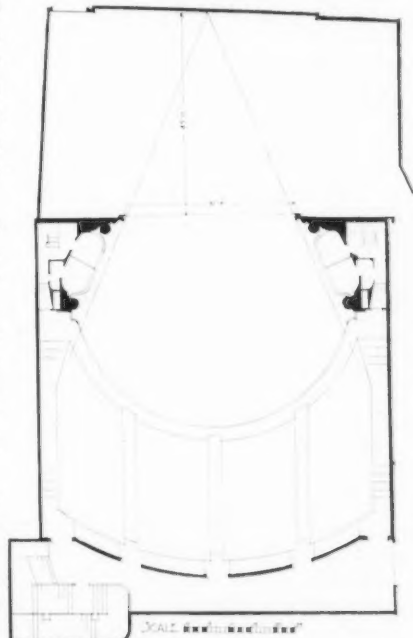
In this manner the lines are established for the balcony and gallery along the center line of the house. If the seats are in rows parallel to the curtain, each row can be made horizontal, but when the seats are on a curve in plan, the rows must pitch

sidewise in order to preserve proper sight lines, the amount of pitch being determined by working out a section along the limiting side line of the plan. On this side line the rearmost row of seats can be kept at same level as on the center, but the front row must be dropped enough to give clear sight on the stage floor at the curtain line on the side of the curtain opening. This cuts down the height at curtain line visible from the extreme side seat under the balcony, which is usually unavoidable, but which is in accordance with the usual practice so long as this height is not reduced below twelve feet as against twenty feet on the center line. Hence it will be seen that with balcony curve of short radius, the sight lines become difficult of arrangement, and with a horseshoe shape are impossible. European balconies generally have thoroughly bad side sight lines, and in the case of the Paris opera, one can not see the stage at all from the extreme seats of the side gallery.

The diagrams (12, 13, 14, 15, 16, 17) will show the varying ways in which the sight lines have been worked out in section.

The dimensions figured on the illustrations are only approximate, being worked out from small scale drawings intended to give only general relations of parts.

There are a few other things to consider in connection with sight lines. In the desire to accommodate the greatest number of people

FIG. 10. BALCONY, OPERA HOUSE,  
INDIANAPOLIS.FIG. 9. BALCONY, COLONIAL THEATER,  
BOSTON.

in the least space, and with the feeling that because the gallery seats are cheaper than the orchestra therefore the gallery seats need not have as much consideration, many theaters have been planned with the gallery carried back so far and so high that the topmost row was considerably above the top of the curtain opening.

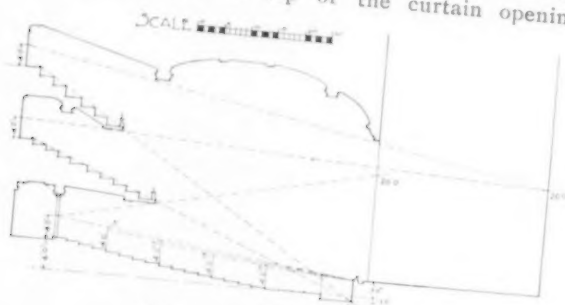


FIG. 11. TYPICAL SECTION.

This is a thoroughly vicious arrangement and in no theater should any seats ever be carried as high even as the top of the proscenium opening. The curtain opening is generally made not over thirty-five feet. Consequently in a well-planned theater no seat in any part of the gallery should be more than thirty-five feet above the stage level and should be as much lower as the greed of the manager and the size of the lot will permit.

It will be seen that the sight lines of a theater call for a very considerable degree of expert knowledge, as the different factors involved are so closely correlated that no one can be considered alone, and even a slight change in one necessitates change in all.

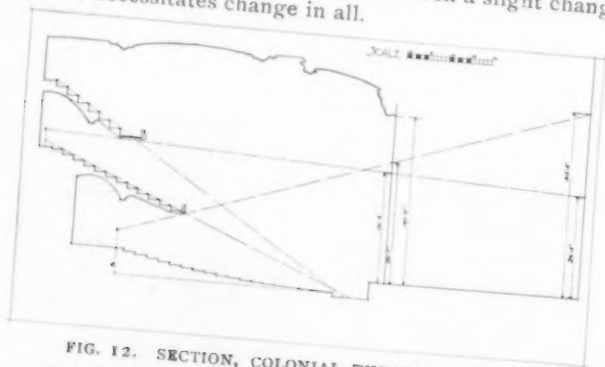


FIG. 12. SECTION, COLONIAL THEATER, BOSTON.

ACOUSTICS is the one baffling problem which has so far set at naught scientific research. There has been some most excellent work done by such investigators as Professor Sabine, of Harvard College, who has analyzed results most convincingly, and who has been able to reduce the results of his experiments to definite coefficients and formulæ, but when it comes to determining in advance what the acoustic properties of a given hall shall be, the only guide is experience, and even that is sadly unreliable from causes for which we are often wholly at loss to account. If there is to-day any workable theory for determining acoustic properties of a hall of audience it has yet to be successfully applied in practice, and the most that we can do is to draw a few lessons from observed facts, and even these must be applied with fear and trembling if one departs at all from the beaten track of safe practice. Having found that one hall is excellent acoustically, the only sure way

is to exactly copy that hall, line for line, and in every dimension, and even then sometimes an unexpected combination seems to set all our plans at naught. Sound is not propagated in straight lines nor in straight waves, but apparently in spherical undulations, which are so extremely tenuous as to be easily modified or deflected by slight obstacles. We have not yet reached even a satisfactory starting point for the theory. Professor Sabine's experiments appear to have been conducted with a view to diminish the residual effect of sound, to absorb the waves, rather than to intensify them. Other experimenters have hypothesized that beyond certain distances from a focal center, all surfaces of walls, etc., must be made absorbent, while surfaces near at hand should be reflective of sound. But in a theater

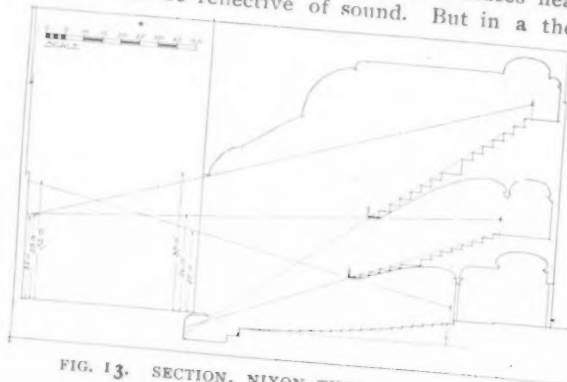


FIG. 13. SECTION, NIXON THEATER, PITTSBURG.

there is no focus from which to reckon. Action, speech and music may start from any point of the stage and even at varying levels above the same, while there is the added complication that the music in the orchestra pit must be effective to both the audience on one side and the artists on the other.

There are, however, a few things which we know by experience. Of recent years, there have been built a number of open-air auditoriums, which have been used quite extensively throughout the West, in connection with the various Chautauquan movements. These are simply huge wooden shelters on a circular or square plan, built without any sides, open to the air and with concentric rows of seats. In some cases, audiences as

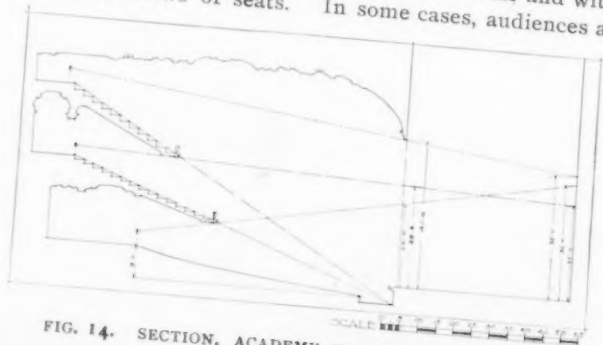


FIG. 14. SECTION, ACADEMY OF MUSIC, BROOKLYN.

high as four and five thousand have been accommodated under perfect acoustic conditions, and it has sometimes been found that a shelter of this sort, which is perfectly good while the sides are open to the air, becomes bad acoustically when the sides are closed in, quite irrespective of the material of closure. Again, it

seems to be a fact that spoken and musical sounds will travel with less interference across a moving current of air than they will travel with the current. Consequently, when the fresh air is introduced, so as to ascend in vertical columns through the house, the effect of the ventilation, instead of carrying the sounds away from the audience, seems to be to render them more distinctly audible. In the writer's experience the most fertile cause of trouble in an auditorium seems to rise from inequalities of temperature. The sound waves, passing from a warm through to a cold strata, seem more likely to

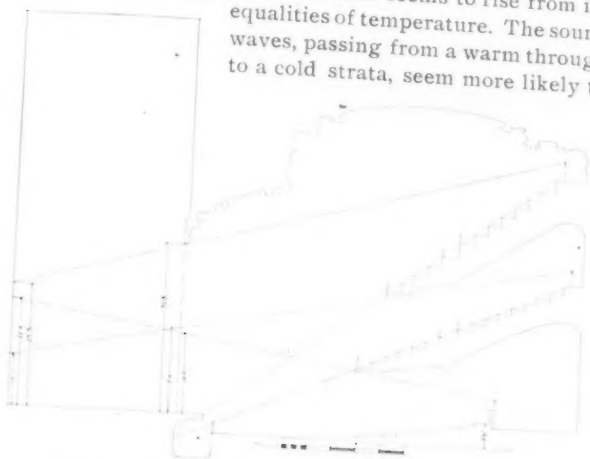


FIG. 15. SECTION, MAJESTIC THEATER, NEW YORK.

be confused than when the temperature is maintained at an even degree throughout. Consequently, the ideal hall, on this assumption, would be one in which there are no outside walls directly exposed to the weather, but in which the auditorium is entirely surrounded by a larger building on all sides, so that there shall be no cold walls or ceilings. It has been noted also that an auditorium with a domed ceiling is quite apt to have bad acoustic

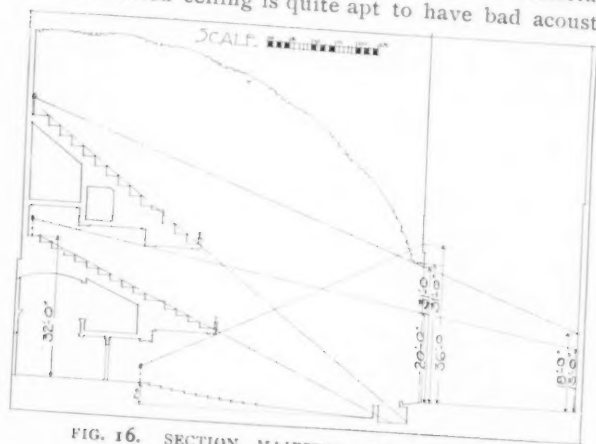


FIG. 16. SECTION, MAJESTIC THEATER, BOSTON.

properties; that, on the other hand, a hall with a flat ceiling seldom gives any trouble. Against this, however, is the fact that a plain ceiling unbroken by beams may affect unpleasantly the sound. The hall which has the reputation of being the best acoustically, in this country, is the Sanders Theater, of Harvard University, which has an open, Gothic, wooden ceiling and has the arrangement in plan of an amphitheater. Again, quite aside from the question of arrangement or absorption, there is the question of timbre, the quality of sound.

One hall will be very easy to speak in, and the smallest modulations of voice seem to reach each spectator, while in another, everything can be heard with perfect ease

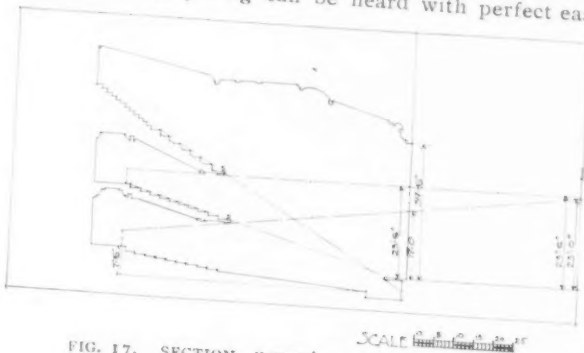


FIG. 17. SECTION, KEITH'S THEATER, BOSTON.

but the sounds are not soft or pleasing. The problem, in fact, is a wholly indeterminate one, and conclusions cannot be supported by logical reasoning, but only by a sense of measuring what has come out well in various halls, and trying to combine different features into what might be termed an ideal auditorium. In such an auditorium, measured by the writer's experience, there would be a carpet on the entire orchestra floor throughout. The floor of the orchestra pit, where the musicians sit, would be made hollow with a half-inch, thoroughly seasoned upper floor, furred off from the under floor like a sounding board. The ceiling would be generally flat, but would be broken up a good deal by projecting beams. The walls on the other hand, would be kept quite plain beyond the proscenium front, broken, if at all, only by very shallow pilasters. The drapery about the boxes would be reduced to a minimum and there would be no drapery or carpeting in galleries, except the strip of carpeting down the aisles. Such an arrangement has repeatedly been used, coupled, of course, with uniformity of temperature and evenness of ventilation, and has always given excellent results.

Various schemes have been devised to improve acoustic properties and to insure special results. The megaphone type, in which the lines of the plenum are carried out through the whole ceiling, as in the Majestic Theater, at Boston, or the Auditorium, in Chicago, was a perfect success in one instance and a doubtful result in the other, giving really too much sound and a little tendency to harshness. A certain architect made quite a reputation for himself by effectually stopping echo in a theater by the simple process of furring up the floor a few inches. But when he came to apply the same treatment to another house of slightly different disposition and plan his scheme was an utter failure. There are some cases of houses which when empty resound like a sounding box but which when filled with people and warmed are mellow and pleasing in their acoustic properties. In fact, it may be generally stated that a hall which is even tolerable when empty is pretty sure to be greatly improved, if not perfect, when warmed and filled, and the comforting thought in connection with the whole vexatious problem is that, after all, most halls of audience are good acoustically and a very small percentage of those that are built are so bad that they cannot be used or that they bring discredit upon architect or owner.

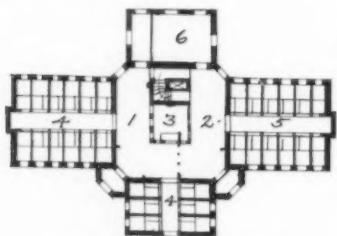


## The Public Bath—II.

## THE GERMAN TYPE.

BY HAROLD WERNER AND AUGUST P. WINDOLPH.

WE find that there is established throughout Germany, even in the smallest towns, public baths with at least the shower facilities. The most notable improvements in the German baths have been made in the development of the shower bath, in pool bath construction, in the workmen's bath, and the technical excellence of the fittings. There is also an admirable system of compilation, which shows the attendance and cost of maintenance.



SMALL BATH, HANNOVER.

1. Men's Waiting Room. 2. Women's Waiting Room. 3. Office. 4. Men's Shower Halls. 5. Women's Shower Halls. 6. Wash Room.

An early form of the small municipal bath is illustrated from Hannover.

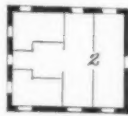
Most of the early buildings were provided either with swimming facilities or with the tub bath, as in England, and it was not until 1880 that Lassar, a German authority, following the suggestion offered by Vasher for reform, recognized that the best means of bathing the people should be a bath combining extreme simplicity and economy. He accordingly advised the sole use of the shower bath for the middle and working classes as the most practical of all. He further suggested the installation of a certain number of these bathing compartments for the use of the workmen in industrial establishments, as well as in the mines. These baths have been known as the workmen's baths and have proved most successful throughout Germany, and they could be used with good results in this country, both in the mines and in large manufacturing plants. They are inexpensive in construction and simple in plan, consisting of the requisite number of shower compartments with dressing room provided with adjustable poles which can be raised to the ceiling, thoroughly isolating the articles of wearing apparel. Some of these workmen's baths are provided with disinfecting rooms, thus furnishing a bath for the clothing as well as for the bather. Some simple forms of workmen's baths



BATH AT KRUPP WORKS.

1. Tub Rooms. 2. Shower Room. 3. Toilets.

The public laundry and wash house, which have always been a working feature in the English bath house, have of late years been practically discarded in Germany. The last public bath and wash house was constructed in Augsburg as far back as 1871; to-day we find the laundry in a special building.



BATH AT KRUPP WORKS.

1. Tub Rooms. 2. Shower Rooms.



shows the simplicity of the shower arrangements, the angle of spray and the floor section for drainage.

A somewhat larger bath is illustrated from Borsigwerk. This building has a capacity for bathing fifty workmen simultaneously. The showers are arranged in separate compartments with ample rooms for administration.

Still another type of workmen's baths, for miners, provides for bathing the men in common in a long bathing hall with a straight row of double showers, the young men having a separate room. Adjoining rooms provide for the hanging of the clothing. Offices, an emergency hospital and a morgue are also provided.

The following general recommendations have been urged by the German authorities for workmen's baths, which it would appear are equally applicable to the larger type of baths:

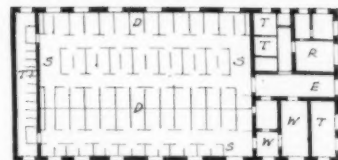
1. The greatest possible utility in the least possible space.
2. Ease and convenience in cleansing the bath compartments.
3. Avoidance of all wood.
4. Prevention of draught with the rational position of the shower nozzle (preferably at forty-five degrees).

The success of the workmen's bath resulted in the adoption by the various municipalities of a type of small bath modeled on these lines. Their capacity ranging from a dozen bathing units in the minor establishment to fifty or one hundred units in cities of the first class.

The people's bath at St. Paul's, Hamburg, is a type of the small city bath in Germany. There are four shower compartments for women and eight for men. The building is situated at the corner of two streets and has proved serviceable and economical in operation.

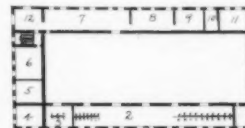
A somewhat similar municipal bath for cities of the second class is illustrated in the public baths of Chemnitz. The plan shows the proper proportion of men and women shower compartments with the corridors against the exterior walls.

The municipal bath at Mannheim has separate waiting rooms for the sexes with provisions for fourteen shower compartments, ten for men and four for women. The corridors are on the outside walls and numerous windows provide



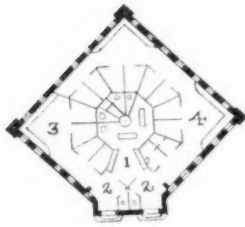
WORKMEN'S BATH, BORSIGWERK.

E. Entrance. S. Shower Rooms. D. Dressing Compartments. T. Tub Room. R. Retiring Rooms. W. Waiting Room. T. Toilets.

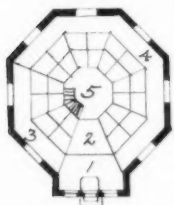


GERMAN MINERS' BATH.

1. Workmen's Dressing Hall. 2. Workmen's Shower Room. 3. Young Workmen's Showers. 4. Office. 5. Morgue. 6. Sick Room. 7, 8, 9. Lamp Stations. 10. Oil Room. 11. Toilets. 12. Entrance.

PEOPLE'S BATH, ST. PAUL'S  
HAMBURG.

1. Office. 2. Waiting Rooms. 3. Women's Showers. 4. Men's Showers.

SMALL BATH,  
MUNICH.

1. Waiting Room. 2. Office. 3. Women's Shower Hall. 4. Men's Shower Hall. 5. Staircase to Boiler Room.

The public bath of the city of Quedlinburg, with a population approximating twenty-five thousand, shows the use of the three forms of bathing. The shower baths are in the basement, the pool and tub baths are on the first floor, and steam and hot air baths are on the second floor. The establishment also includes a laundry and superintendent's living quarters.

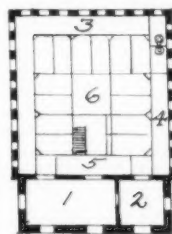
The vapor, hot air, steam and Roman baths have lately been introduced into the larger establishments and

ample light and air. The plan is compact and is well adapted to the needs of a small city.

The small bath at Munich shows the use of the octagonal plan with provisions for four showers for women and eight shower compartments for men.

The City Bath at Mainz shows the entrance for the sexes properly separated. This plan with some modifications has been adopted by towns and small cities throughout Ger-

many as well as in America. These small baths are also found in cities of the first class as illustrated in the small city bath at Berlin, which provides for tub bathing as well as showers. Provision for the first and second classes is also made in each bathing hall. In the shower bathing halls the dressing compartments are separated from the showers, and the tub bathing halls are well lighted and ventilated. A small laundry and the boiler room are in the rear wing of the building.

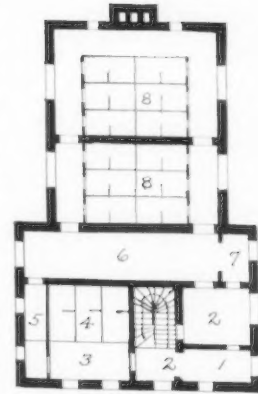
SMALL BATH,  
MANNHEIM.

1. Men's Waiting Room. 2. Women's Waiting Room. 3. Men's Showers. 4. Women's Showers. 5. Office. 6. Drying Room.

The bath at Stuttgart, completed in 1892, is provided with two pools. The women's plunge is on the main street and conveniently arranged to the entrance hall. Access to the men's plunge room is provided through an extremely long, groined corridor. It is difficult to understand why the men's pool, serving the principal bathing purpose of the institution, should be placed at the extreme rear of the plot, — particularly as there is no rear access provided, — necessitating a walk of some three hundred feet from the entrance hall. Preliminary shower rooms are also provided for, with a second story

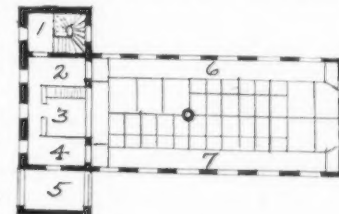
of dressing compartments for the plunge room. The tub bath provides the auxiliary means of bathing on this floor, and the engine and power rooms and a few tubs for medicinal purposes are provided for in the basement of the main building. The narrowness of the plot makes economical planning exceedingly difficult, and the numerous long corridors and passages, though direct, are of little assistance in promoting easy communication and convenience of handling the bathers.

The bath at Munich is another elaborate example of the modern German type. The large pool baths, the Roman bath, a circular room with provisions for cold and warm immersions with the adjoining steam, spray, vapor and rubbing rooms makes the plan complicated and the structure costly. It is needless to say that a plan of this character is hardly adaptable for use in America for public purposes. Many of its sanitary features are adaptable for municipal purposes, although its general features offer more suggestions for the private, so-called Turkish and Russian baths.



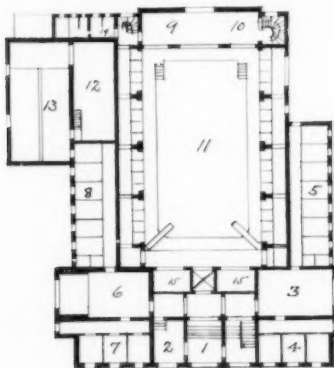
BATH CHEMNITZ.

1. Entrance (women). 2. Office (both sexes). 3. Women's Waiting Room. 4. Women's Showers. 5. Women's Toilets. 6. Men's Waiting Room. 7. Entrance (men). 8. Men's Showers.



BATH AT MAINZ.

1. Entrance. 2. Women's Waiting Room. 3. Office and Wash Room. 4. Men's Waiting Room. 5. Entrance. 6. Women's Shower Hall. 7. Men's Shower Hall.



FIRST FLOOR PLAN.

BATH AT QUEDLINBURG.

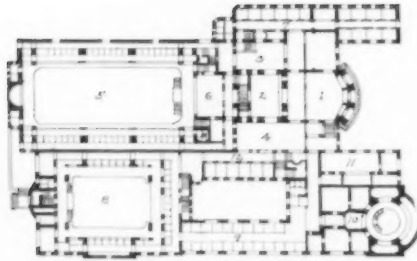
- FIRST FLOOR.  
1. Entrance. 2. Office. 3. Waiting Room (women). 4. Women's Tubs, First Class. 5. Women's Tubs, Second Class. 6. Waiting Room (men's). 7. Men's Tubs, First Class. 8. Men's Tubs, Second Class. 9. Preliminary Cleansing Room for Adults. 10. Preliminary Cleansing Room for Children.



SECOND FLOOR PLAN.

11. Pool. 12, 13. Upper Part of Boiler and Engine Room. 14. Toilets. 15. Rooms for Bath Clothes.

- SECOND FLOOR.  
1. Steam and Hot-Air Baths. 2. Retiring Rooms. 3. Superintendent's Quarters. 4. Toilets. 5. Balcony for Children.



THE MULLER BATH, MUNICH.

1. Entrance Hall. 2. Office. 3. Men's Waiting Room. 4. Women's Waiting Room. 5. Men's Pool. 6. Preliminary Cleansing Room. 7. Tub Baths for Men. 8. Women's Pool. 9. Retiring Rooms. 10. Steam, Hot-Air and Vapor Baths, and Women's Pool. 11. Refreshments. 12. Tub Baths for Women.

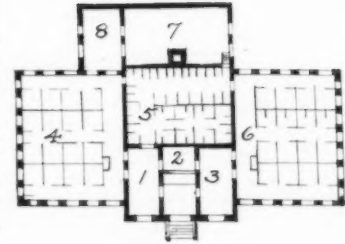
is far more compact and economical than the Stuttgart Baths. The different classes of bathers for both sexes have quick and convenient access to the various bathing halls and the arrangement for diverting the various classes of bathers is to be commended.

The bath at Hannover, completed in 1905, illustrates the highest type of public bath development in Germany. This establishment, facing on two streets, with a plot of ample size, has a decided advantage for ease of administration. The arrangement of the courts provides each wing with a liberal amount of light and air. The bathing halls and administration are in the main building, while the superintendent's living quarters are in a separate building on the rear street;—the boiler and powerhouse is also isolated. The exterior is rather stiff and formal and is characteristic of the late German work. The administration wing is well expressed, though the ecclesiastical appearance of the bathing hall pavilions, while interesting and vigorous, has but little of the character of the municipal bath house.

The plunge room is typical of the latest period of construction on the continent. A large, two-story bathing hall has a cove ceiling with penetrations for clear story openings, affording ample light and air. The dressing compartments are in groups of three between the piers. Easy staircases on both ends give access to a second story of dressing-rooms. Access is afforded to the dressing-rooms from the main entrance by means of the exterior corridor, and from the dressing-rooms in turn to the preliminary cleansing shower room with accessory toilets. From the cleansing showers to the pool runway is but a few steps. The preliminary cleansing shower rooms are provided with a series of wall showers, with additional foot basins,—a recent innovation. The first-class pool is very liberal

The city bath at Frankfort, completed in 1896, is provided with three pools. Separate waiting rooms are provided for the sexes, with adjoining refreshment rooms. Corridors from these waiting-rooms lead to the respective pools and tub bathing halls. The plan

in capacity, containing some 200,000 gallons of water,—the pool's depth varying from three feet to ten feet, its water area, forty-six feet in width by ninety-five feet in length. The women's plunge room has preliminary cleansing rooms in alcoves to the rear with eleven shower and foot baths. The Brauseraum is a square chamber with shower alcoves on the corners, and two small pool baths at different temperatures are arranged in the apses. The sanitary appliances and appointments of this room are very elaborate and costly, and suggest the private bathing establishment.

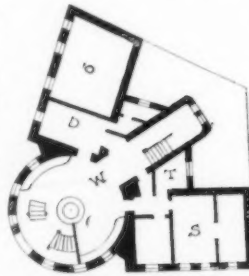


BATH, BERLIN.

1. Men's Waiting Room. 2. Office. 3. Women's Waiting Room. 4. Men's Tub Baths. 5. Shower Rooms. 6. Women's Tub Baths. 7. Power and Boiler Room. 8. Laundry.

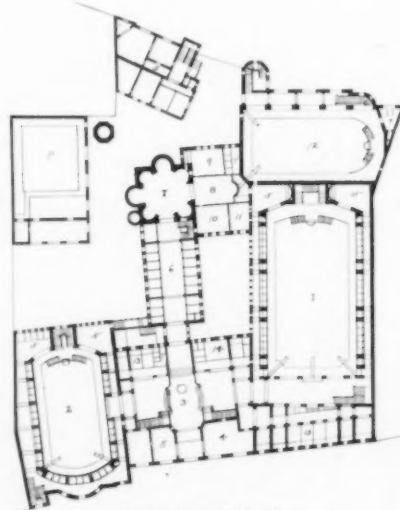
The second-class swimming pool, somewhat smaller in size and capacity, is not provided either with the outside runway or dressing compartments. The bather after entering from the street ascends the staircase to the second-story balcony where simple racks and hooks are provided for his wearing apparel. After undressing he descends the staircase to the preliminary cleansing wall-showers and then to the pool.

The connecting wings on the first story are mainly devoted to retiring compartments, tub-rooms, refreshment and toilet rooms. The second floor, main wing, is entirely devoted to tub-bath purposes. It may be noted that



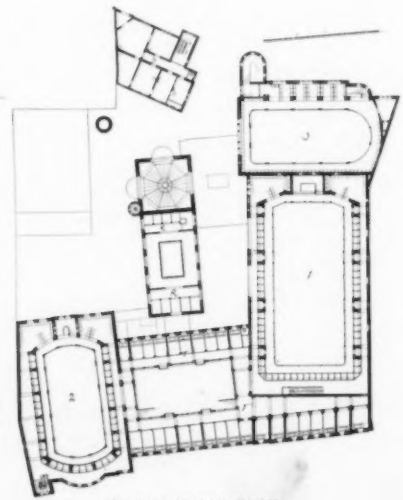
PEOPLE'S BATH, ESTERHAZY STREET, VIENNA.

O. Office. D. Disinfecting Room. W. Waiting Room. S. Superintendent's Quarters. T. Toilets.



FIRST FLOOR PLAN.

1. Men's First Pool. 2. Women's Pool. 3. Main Hall and Office. 4. Refreshments. 5. Hair Dressing Room (women). 6. Retiring Rooms. 7. Shower Room. 8. Spray Room. 9. Steam Bath. 10, 11. Hot Air Rooms. 12. Men's Second Pool. 13. Tub Rooms. 14. Bath Clothes. 15. Preliminary Cleansing Rooms. T. Toilets. P. Power



SECOND FLOOR PLAN.

House. S. Superintendent's Living Quarters.

SECOND FLOOR

1. Men's Pool, Balcony Lockers and Dressing Compartments. 2. Women's Pool, Balcony Lockers and Dressing Compartments. 3. Men's Second Pool, Balcony Lockers. R. Retiring Rooms. Superintendent's Quarters. T. Tub Rooms.

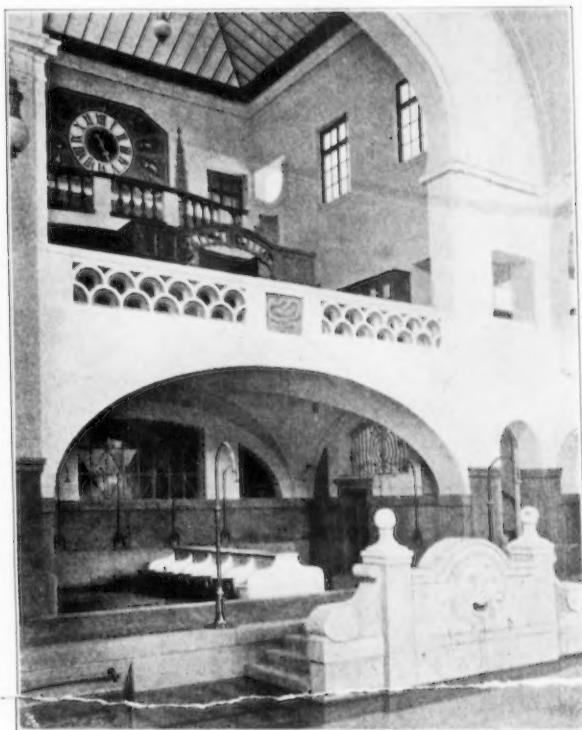




ROMAN BATH, MUNICH.

this large space provides only twenty-eight bathing units,—so generous an allowance could hardly be commended from the standpoint of municipal economy.

As in Germany and England, the first bathing institution in Austria was a city river bath, on the Danube, at Vienna—some thirty years later than its German prototype and nearly a hundred years later than the old English bath on the Mersey. At the present time Vienna is equipped with several bathing institutions provided with showers similar to the Berlin baths. The Esterhazy Street People's Bath, Vienna, has the advantage of a corner location with numerous openings for light and



PRELIMINARY, CLEANSING ROOM, BATH AT MUNICH.

air. The waiting room, office, superintendent's quarters and a disinfecting room are on the first floor. The bath halls are arranged on the second and third floors, and the shower compartments and dressing rooms for men and boys are in separate halls. The advisability of placing the women's baths on the third floor and making them of equal capacity to the men's is to be questioned. Allowing special provisions for youthful bathers is a practice prevalent to-day in Germany as well as Austria.

The public baths of France and the comparatively few baths of Southern Europe have little to offer us either in design or construction, as in most cases they have followed English or German models, which have also served as a type for baths in the United States.



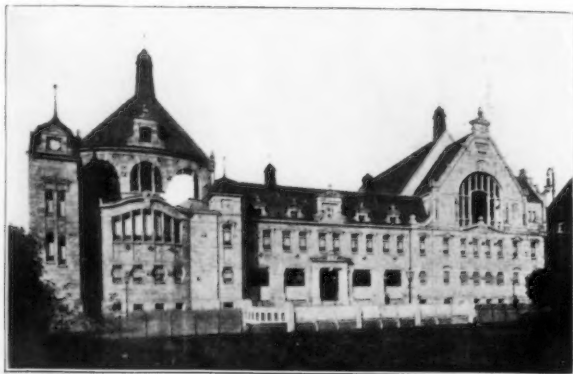
MEN'S POOL, FIRST CLASS, BATH AT MUNICH.



WOMEN'S POOL, BATH AT MUNICH.



BATH AT MUNICH.



BATH AT HANNOVER.



MEN'S POOL, FIRST CLASS, BATH AT HANNOVER.



MEN'S POOL, SECOND CLASS, BATH AT HANNOVER.

## On the Buying of Architectural Books.

BY L. A. WARREN.

THE American student abroad is apt to be forcibly impressed with the variety of good architectural publications there within easy reach of a moderately filled pocketbook, and if he is ambitious, and appreciates the value of books, he is very apt to bring back with him as large a working library as his means will stand. In the same way the draughtsmen in our American offices are quite likely to begin the formation of a professional library while they are still mere beginners. While books are an absolute necessity for a successful architect, the immediate need for their possession by a student or a draughtsman is to be questioned. In these days of most excellent public libraries, when so many architects have excellent working collections of books in their offices, to which the draughtsmen have free access, there is not the slightest real necessity for a young man to encumber himself with architectural folios, and his money would be spent to far better advantage in subscribing freely to the American, English, French and German architectural publications. Besides, a young man is usually in a formative state, he is not likely to find himself early, he does not know in which direction will lie his greatest opportunities, nor does he know the kind of books from which he can draw, nor even surely

the architectural style which will be his ultimate expression. The standard works he can always consult in a library. Others he does not yet need, nor know how to use. My advice to a young man would therefore be, to keep and study the files of at least four of the best architectural serials, to buy very sparingly of architectural photographs, and to limit his library to a thoroughly good edition of Vignola, and a copy in the original of Guadet, if he can read French. Then when he is through with the preliminary stage, let him gradually accumulate his library as he feels the real need thereof, buying only works that can be of actual help in his business, and making them thoroughly his own. And the student abroad can well afford to neglect the opportunity to buy good books cheap, for he will not need them at first, and later on he may find himself loaded up with books which he does not want. A compact, small library, every volume of which meets a known want, every illustration catalogued and ticketed both mentally and by a proper card index, is a necessity to every architect who means to grow and who wants to make the most of himself, but to be of the most value it must accumulate slowly as his practice grows, and must not be encumbered with the debris of youthful, indiscriminate enthusiasm.

## “Homewood”—A Famous Colonial Mansion of Maryland.

“HOMEWOOD,” surrounded by sixty acres of wooded land, and having one of the finest locations in Baltimore, is considered the best example of Colonial architecture in Baltimore County. It was, however, built much later than the Colonial period and was the last of the well-known brick Colonial houses of the South, which may account for its refinement. It is also the farthest north of any of the houses of this class.

over which still remain parts of an old bridge. The entrance was from the York Road and through what is known as Mariman's Lane; the estate—now very much reduced in area—is entered from Charles Street Avenue, only a few hundred yards from the east front.

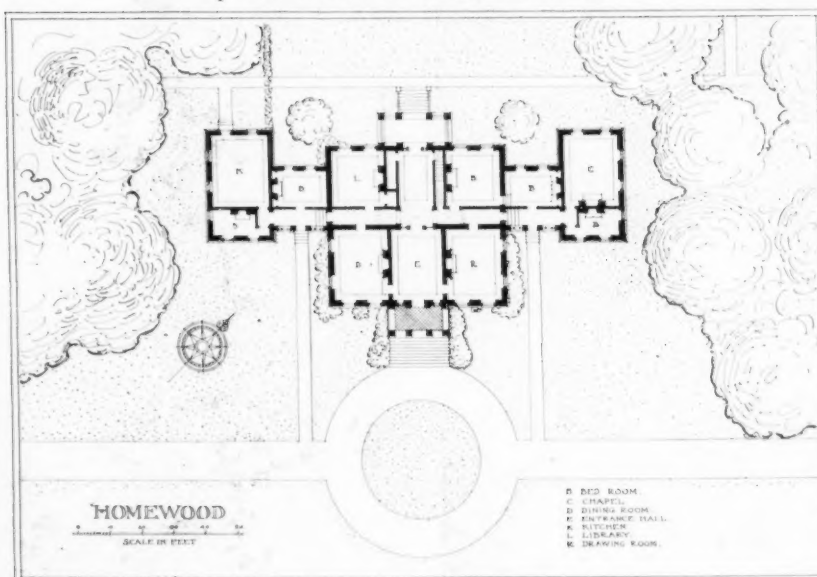
A short driveway under tall trees leads to a flight of wide, marble steps, guarded on either side by a wrought



“HOMEWOOD,” BALTIMORE, MARYLAND.

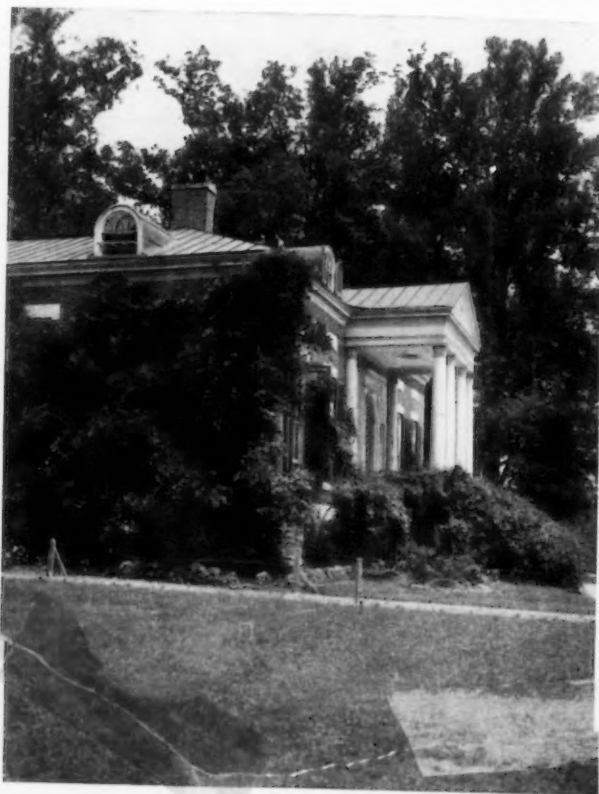
Colonial houses show a marked difference in Maryland and Virginia from those farther north,—in the North, they were built on small estates, while in the South they are on very large estates.

It is a low, rambling building one hundred and forty feet long, with the principal front facing south-east and opening onto a large lawn which is terraced down to a brook,



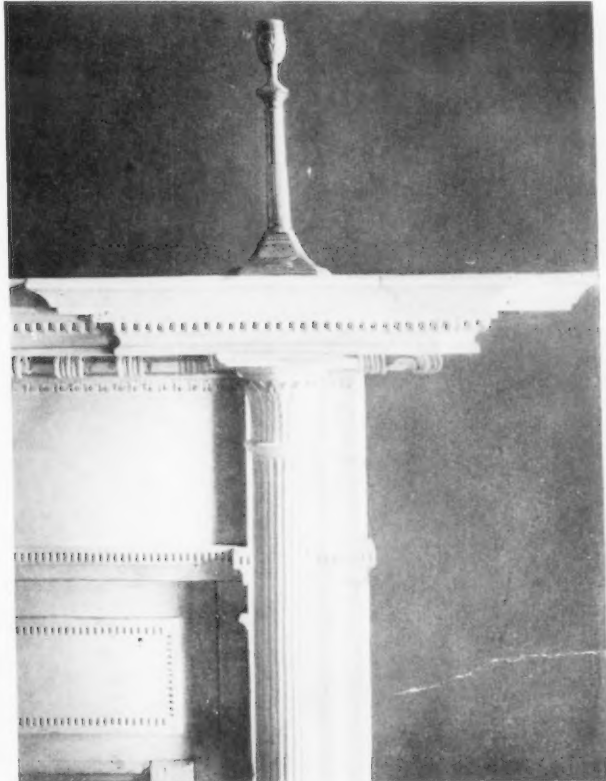
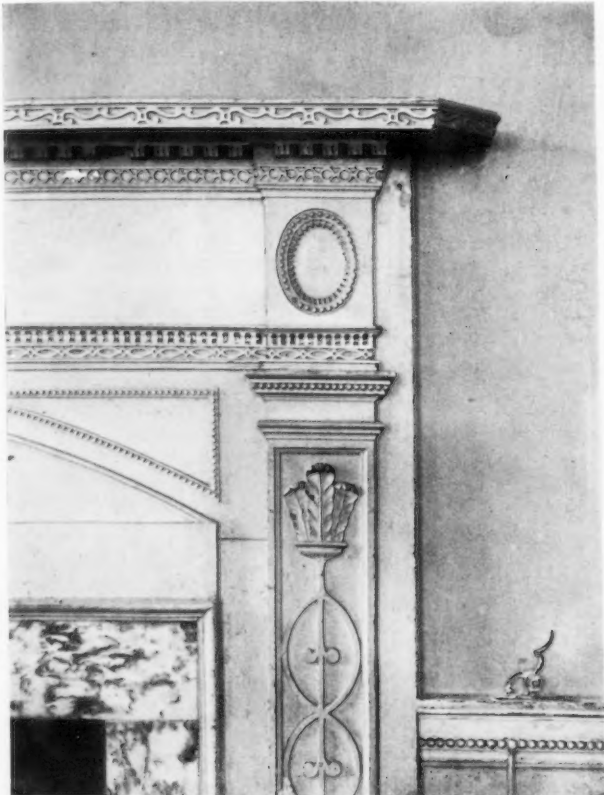
iron balustrade, covered with honeysuckle. These steps lead to the marble pavement of the porch, which is the keynote of the design. The wood columns are unusually delicate and refined, as is the general detail of the porch and entrance,—the pediment, richly ornamented in cast stucco, has no equal in any of the older houses, and the real charm of





DETAILS OF "HOMEWOOD."





DETAILS OF "HOMEWOOD."





"Homewood" lies in the liberal handling of unusual and refined detail. In general, the design shows the influence of the Annapolis and James River houses. Here the designer breaks away from architectural traditions, and influences a style of detail that is found generally in old Baltimore houses, such as "Montebello," built only a few years after.

The exterior walls are of small, red brick laid in Flemish bond with sills and stone courses of a light, soft stone. In the north and south connecting wings are most carefully built brick arches, over the Palladian windows, — the semi-circular arch springing from the flat arch, all having the same center and being self-

rooms being on the ground floor. The chimney-pieces show quite the same refinement and free design as the exterior, and they are of a very marked difference in the various rooms. All the ornament throughout the entire house is cut in wood. Fine geometrical designs, beading and fluting are freely and effectively employed. The visitor is much impressed with the finish and graining of the doors, which are pine, but generally taken for mahogany.

"Homewood" was built in 1803 by Charles Carroll of Carrollton, as a residence for his son, Charles Carroll, Jr., who, in 1800, had married Miss Harriet Chew of Philadelphia. On the death of Charles Carroll, of "Home-



THE STABLE, "HOMEWOOD."

supporting. There still hangs at the left of the east entrance the cast-iron seal of the fire company of long ago.

The entrance is through two sets of doors, the outer of glass and the inner of wood, opening into a large, square entrance hall, screened from the main corridor by a glass door and side lights with a leaded glass transom.

A corridor extends through the length of the house from the kitchen to the chapel. In the corridor and entrance hall are wood arches, finely wrought by the skilled workmen of the time. An enclosed stairway leads from the garden entrance hall to the second story, where there are but four bedrooms, — most of the bed-

wood," his son, Col. Charles Carroll, inherited the estate, and later, on the death of his grandfather, in 1832, Col. Carroll inherited Doughoragan Manor, in Howard County, where he made many alterations and took up his residence. On December 20, in 1839, "Homewood" was conveyed to Samuel Wyman, who made it his residence during the remainder of his life. His son William inherited the property about 1877, and conveyed it to the Johns Hopkins University in February, 1902. The new buildings of the University are to be built around the present house and are to be in the same style. The old mansion is to be used for the residence of the president of the University.



## An Interesting Bungalow.

BY W. H. ANSELL.

UNDOUBTEDLY the most successful bungalow is one that has been designed with a governing idea, a root motive, so that the purpose of the building is obviously expressed in its planning.

The illustrations show such an one. It was planned for a man of moderate wealth, who, whilst wishing to get away from the conventionalities and restrictions of city life, had the intention of "roughing it" in comparative comfort, and of keeping his bungalow well filled for a great part of the year with young and lively company.

The whole of one end of the central part opens to the veranda, which has, on either side, deep, shady lounge bays. Meals will be often served in these bays, and to facilitate this a door communicates from the kitchen to the veranda.

The other end of the living-room has a small stairway leading to a minstrel's gallery, where the fiddlers play when the hall is cleared for the dance or the winter party. The sleeping arrangements are a feature of the planning. From the entrance hall two bedrooms are entered, in which the married visitors are usually accommodated, and at either end of the veranda is a sleeping apartment, men's side and girls' side.

Each of these apartments is divided into three cabins by thin concrete partitions. One side of the cabins is fitted with two hanging bunks which can be unhooked and taken down. At the end of the bunks is a roomy wardrobe or cupboard fitted with shelves above and hanging space below. Opposite the bunks are hinged seats which fold flat against the wall when not in use. Outside the wardrobe are strong shelves where trunks and bags may be stored. The fitting of mirrors with convenient shelves for brushes completes the furnishing of men's side and girls' side which thus require no movable furniture whatever, but are ready at any time for guests. As each cabin is six feet wide and has its own door and window it can be made into a private

room. To minimize the amount of service required, wash basins are fitted in a bay with high windows, and at the end of the compartment, approached through a cut-off lobby, is the sanitary adjunct which contains a shower bath.

The outside walls are brick whitewashed, and as even

so simple an operation as whitewashing is not always done in the best manner, save, perhaps, when the genius of a Tom Sawyer directs the proceedings, it may be as well to specify how this was done. Unslaked lime was used, mixed in small quantities, and while the ebullition was going on a generous allowance of Russian tallow was stirred in, and the hot preparation applied immediately to the

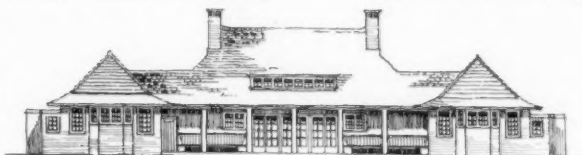
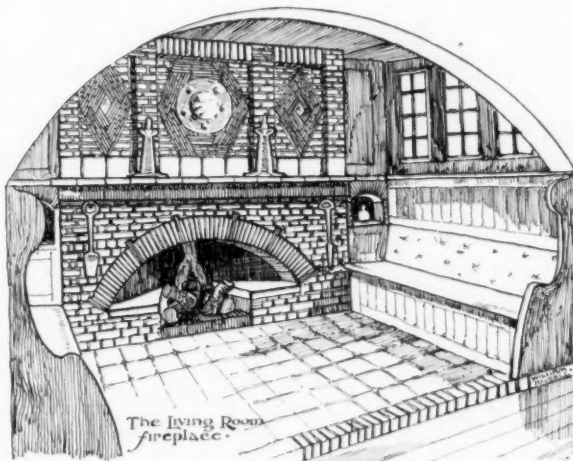
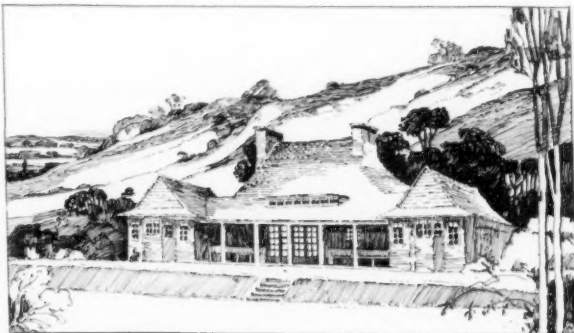
walls. Two coats of this made the exterior like a duck's back, so far as throwing off the water was concerned.

The walls inside were plastered. The living-room depends for its effect on its shape, a Greek cross, its simple, big-arched recesses over table and fireplace, and the air of mystery attendant on the minstrel's gallery overhead. The fire is open, with small brick hobs on which the log ends rest. The mantelpiece is formed with thin red bricks wide-jointed, and a shelf of the same thick red tiles with which the whole recess is paved. The wall above is divided into panels, which have tiles set edgewise in diamond and hexagonal shapes. On the center panel is hung a dull gleaming

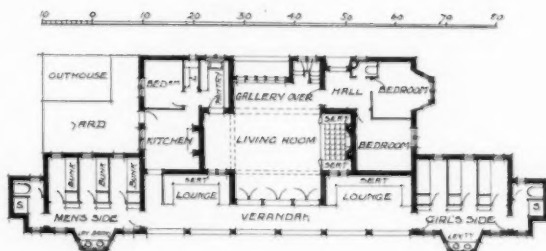
copper targe, in which the flickering candles are reflected.

The side seats of oak, left clean from the tool with ends shaped like old settles, have boxes under, in which many things are stored, from golf clubs to Wagnerian opera.

The furniture of the living-room almost demands a special article to itself. With the exception of the grand piano it was made to the architect's designs by the village wheelwright, and some of the fine craftsmanship that one finds in the old farm wagons is also found here. In short, simplicity, but not dullness or monotony, has been the root motive, the governing idea of the whole.



ELEVATION



PLAN OF BUNGALOW

## A Fireproof Building Which was Fireproof.

THE Exchange Club, Boston, was erected a dozen or more years ago from the designs of Henry B. Ball, architect, and is occupied entirely as a dining club. It is of burnt clay fireproof construction throughout, the only wood appearing being limited chiefly to the trim and to the floors. There are dining-rooms on each story, all of them supplied from a central serving-room in each story, the serving-rooms of the various stories being connected by lines of dumb waiters.

On the tenth of February fire broke out in the serving-room in the third story. This room has no outside light of any description, being entirely surrounded by the dining-rooms and service corridors. The fire had as much opportunity to spread as would ever occur in a building of fireproof construction. The pantry shelves and much of the fittings of the room were of wood, and of course the floors and door finish were likewise of the same material. The fire rapidly spread from the third story through each floor above, communicating by means of the dumb-waiter shaft. The enclosures of these shafts were of terra cotta, but in each story was an opening, with wooden doors, and the elevator cars and guides were of wood. The vertical opening was not fire stopped at any level.

The interior of the serving-room on each story was almost entirely gutted. The fire department managed to keep the fire under very good control without using a great deal of water, most of the extinguishing being done by the use of chemicals. The fire spread out in the corridors adjoining the serving-rooms, destroyed wood finish and partly damaging the upper floors in places; though in no case did the fire spread so as to destroy the finish for a distance of more than fifteen or twenty feet beyond the serving-rooms. A great deal of damage was done by smoke, necessitating the entire re-

finishing of the building throughout. All the doors to the dumb-waiter shaft were consumed, and the cars entirely disappeared. With their customary disregard of nice finish, the firemen did a good deal of damage by unnecessarily smashing doors and cutting away at finish. The total loss to the building, however, was only about twenty-five thousand dollars, and this loss was confined entirely to the finish, the structural damage being absolutely nothing. Since the fire, in making the repairs, the dumb-waiter shafts have been entirely closed.

This affords an excellent illustration of the value of fireproof construction. Here were all the conditions favorable to a bad fire; the interior room, none too easy of access by the firemen, in a portion of the building where an incipient fire might easily be overlooked, with rather more than the ordinary amount of combustible material ready at hand for the flames. The fire while it lasted, and in the location where it started, was hot enough to do a good deal of damage; and had this building been of second-class construction, and had the fireproofing construction been any less thorough than it was, there would undoubtedly have been a very serious loss. It was the fireproof construction that saved it, and the principal damage was to paint and plaster, by mere smoke and water.

We have had a number of examples within a short time of fireproof buildings which were not fireproof. The value of fireproofing methods has been brought severely into question, and their real efficiency has been questioned. It is, of course,

impossible to fireproof the contents of any building, but the Exchange Club shows how a fire can be restricted to the rooms in which it starts or into the spaces immediately adjoining. No one would say that a dumb waiter should be equipped with wooden doors, but barring this one fault, which enabled the fire to spread rapidly through three stories, the Exchange Club fire abundantly demonstrated the value of fireproof construction when properly applied and understandingly employed.

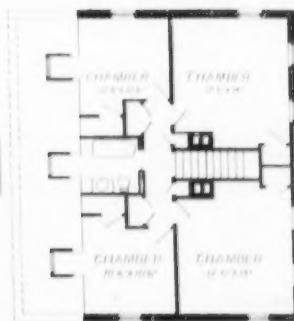
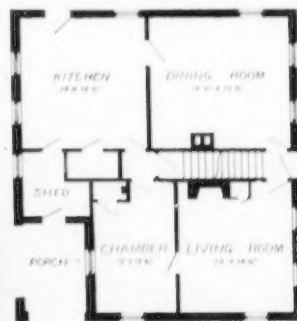
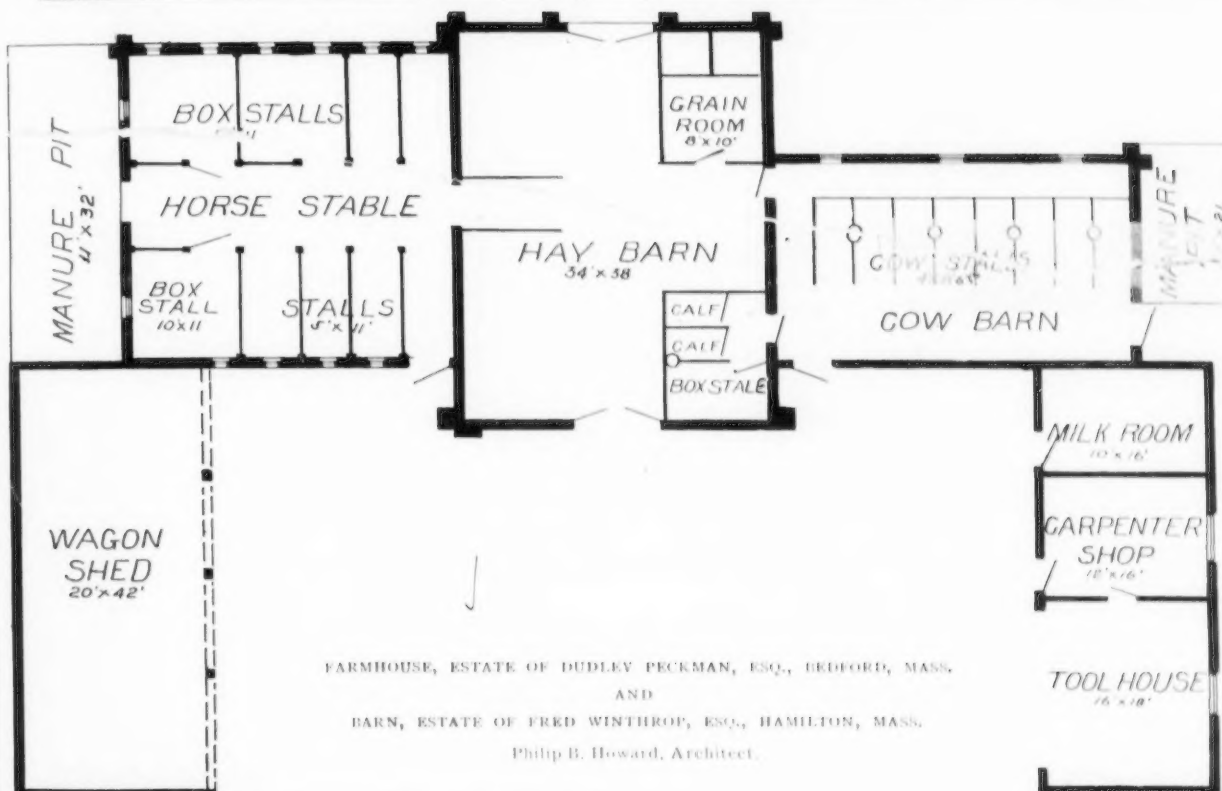


THE EXCHANGE CLUB, BOSTON.  
Photograph taken after the fire.

## The Schoolhouse Fire at Cleveland.

THE horror in the Collinwood School at Cleveland is being held up as a warning. But for whom? As in many other disasters there is danger that the warning will lose its effectiveness by its lack of a definite objective. The people have been warned repeatedly against improperly constructed schoolhouses, against defective means of exit, dangerous heating apparatus, lack of fire drill, overcrowding, etc. No further warning is needed on these points. What the public needs now is a lesson in the duty and responsibility in government, says the Boston *Herald* editorially. Some authority was responsible for the conditions which existed in that Cleveland schoolhouse. There was criminal neglect in the light of every-day

knowledge of what constitute proper and safe conditions. That responsibility should be fixed and a proper penalty imposed upon the officials who neglected their duty. If out of this disaster there can be read to public officials an emphatic lesson of duty and a demonstration of the penalty that justice demands for neglect, the warning of the holocaust may not be without its effect. There can be no excuse in these days, for schoolhouses with improper fire escapes, or with but a single commodious exit. There should be no toleration for schoolhouses with heating apparatus located directly under the main stairway or with doors opening inward or with passageways so narrow as to invite congestion and panic. In these days of fireproof construction why should tinder boxes be used for the housing of school children?





## Editorial Comment and Selected Miscellany

ARCHITECTS might, perhaps, find advantage in concerted action to protect themselves against the practice, which is rapidly growing among contractors and dealers, of trying to hold them responsible for work done, or materials furnished, for their clients or for other contractors. Where a piece of work involves a number of small contracts it is not at all unusual for the architect to find that at least one-half the bills sent to him for approval are made out against him personally, although it has been perfectly understood from the first that he was acting in behalf of a client whose name was known to all the parties concerned. In the great majority of cases the architect corrects or approves the bill, without noticing, perhaps, the name to which it is charged, or wishing to save the time and trouble required for sending it back to be made out to the proper person; and it is paid in due course, together with the bills properly made out. Legally, this is safe enough, as many decisions of the courts have held that where an architect, known to be such, orders goods or work for a principal whose name he gives, or is ready to give if it is asked, the principal only, and not the architect, can be held liable for the price of the goods or work. Notwithstanding the legal aspect of the case, the practice in question is confessedly adopted by contractors, not through inadvertence, as is sometimes pretended, but with the object of holding the architect in some way responsible for payment of the price of the goods or work. Even if he is not legally bound, he may not know his rights, and it is easier for contractors or dealers in materials to hold the threat of a lawsuit over him than to inquire for themselves, as the courts have decided is their duty, into



WORCESTER COUNTY INSTITUTION FOR SAVINGS, WORCESTER, MASS.  
Winslow & Bigelow, Architects.  
View from Gallery, showing Guastavino Dome.



INTERIOR OF DOME, WESTMORELAND COUNTY COURTHOUSE,  
GREENSBURG, PA.  
Built of Terra Cotta made by Northwestern Terra Cotta Co.  
William Kauffman, Architect

the solvency of the real purchaser before they deliver the goods or do the work. Of late years this disposition to hold the architect as guarantor of contracts has increased to such an extent that an architect who endeavors to secure the best results for his clients by subdividing their contracts exposes himself to ruin. We hear a great deal from the smaller contractors of the bad results of erecting buildings by huge blanket contracts, and architects understand as well as anybody the disadvantages, artistic and practical, of doing so; but until the smaller contractors are willing to keep within their legal rights, and treat architects as the friends and advisers of both parties, and not as the guarantors of the agreements that their clients make through them, they must expect to fall into the position of subcontractors, which they dislike so much, and with so much reason. It is true that there are many contractors and dealers in materials who recognize and value the true position of architects in relation to themselves and the owners of buildings. It would be unjust to class them with the people who try to obtain over unguarded members of the profession a hold which may, they think, guarantee them against the consequences of their own business incapacity; and the various associations of architects, local and otherwise, might do much to protect themselves, as well as to promote the interests of the contractors and dealers who are willing to treat them honorably, by keeping lists of those who charge goods or work to



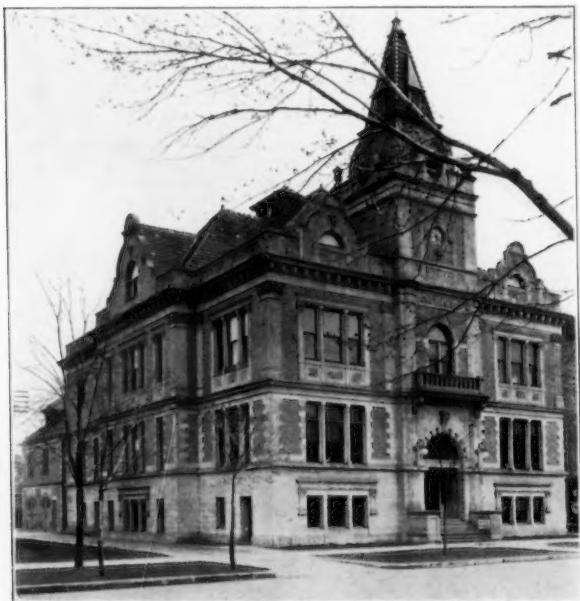
TERRA COTTA FIGURE  
FOR THEATER AT  
SCRANTON, PA.  
Conkling-Armstrong  
Terra Cotta Co., Makers.  
A. E. Westover, Architect.

the architect, instead of to the client or contractor, in order that they may be avoided; with, possibly, a list of those who are willing to promise that, in conformity with the law, if the architect, on request, gives the name of the client or contractor for whom the service is to be done, they may, after further inquiry, refuse to do it, notifying the architect at once of their action, but that they will look for payment solely to the client, or the contractor or his bondsmen, as the case may be, and never to the architect.

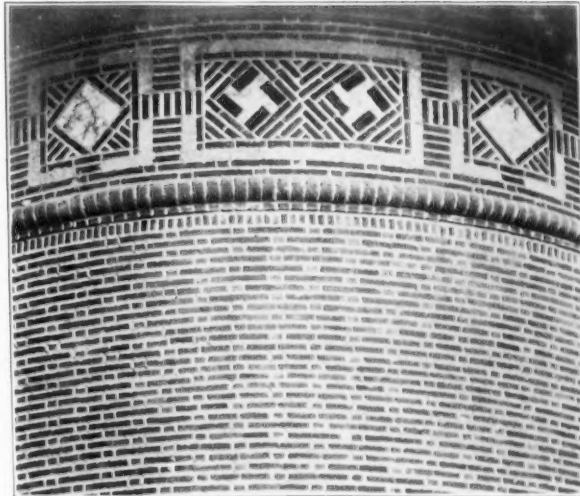
#### EDISON'S CAST HOUSE.

THERE will be a grain of comfort come to those architects who feared that Mr. Edison, with his buy-a-mold-and-some-cement-and-build-your-own-house invention, would deprive them of what little comes their way now, — if what a correspondent in *Cement and Engineering News* states is correct. He says:

"There appeared recently in your publication an article concerning the 'Edison Molded Concrete House,' stating that a two-story structure can be erected for a little over \$1,000, that it can be cast in twelve hours (after mold is in place), that the mold can be removed in six days, that in another six days it will be ready for occupancy, that at the same time all interior and exterior ornaments, as well as the bath tub, mantels, stairs and partitions, will be cast, etc., etc.



CITY HALL, SOUTH BEND, IND.  
Built of Hydraulic Press Brick.



DETAIL OF BRICKWORK, MCLEAN HOUSE, WASHINGTON, D. C.  
John Russell Pope, Architect.  
The brick were furnished by the New York office of Fiske & Co.

"Nobody would welcome such an invention more than the writer — but, being an expert in the artificial stone line, and especially in concrete, with an experience covering a period of over forty years, I state most emphatically that it will be impossible to accomplish this.

"I cannot go into all details here, but will mention a few reasons in support of my statements and warn the public not to be too hasty in accepting Mr. Edison's claims.

"It is surprising that not more dissenting voices have been heard. Are there so few real experts in this line of business, or do they fear to come forth to dispute the opinion of so great a man as Mr. Edison? To fill such a 'House Mold' it will be necessary to have a very thin mixture of cement, so thin that it will flow freely. Thus, it will be seen that the aggregates will settle at the bottom, and the water, taking with it the fine parts of the cement, will come to the top and also seep out of all joints (because no iron mold composed of so many parts is absolutely water tight). The scum, which always forms, will, of course, go to the top, into ornaments and especially undercuts. The walls of the mold will neither absorb moisture nor air, therefore little air bubbles will form all over the smooth iron mold. Two aggregates will obstruct many places, and large and small holes are the result. A great deal of mending and patching would have to be done, which may cost as much or more than the first cost of the building. Besides this, such a patched-up



FAIENCE PANEL EXECUTED BY  
ROOKWOOD POTTERY CO.  
Frank M. Andrews, Architect.





OFFICE OF GLIDDEN VARNISH CO.,  
CLEVELAND, OHIO.  
Roofed with French A Tile made by Ludowici-Celadon Co.

concrete is not kept damp for a considerable time, say fifty to sixty days, the final setting will not take place properly, shrinkage and air cracks resulting.

"In my opinion, it will take at least three months, after curing, before this house would be dry enough for occupancy.

"How about floors, doors and windows? None of

house will not look good, even when done by experts.

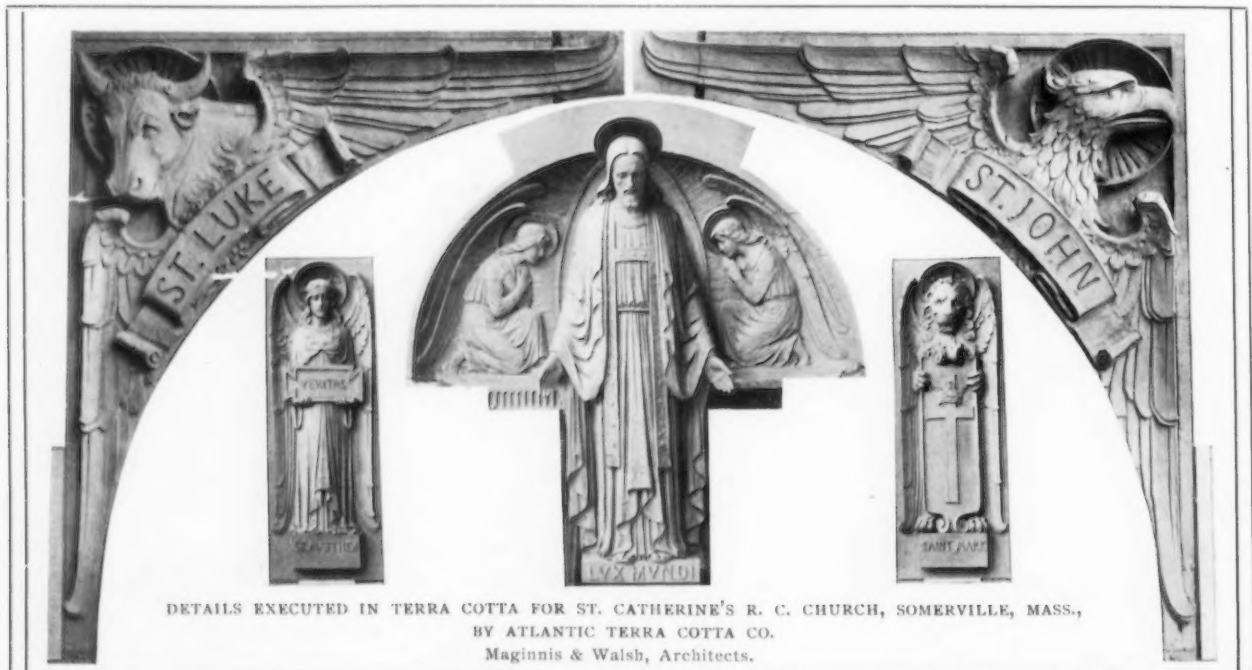
"Next, it is impossible that this house will dry out in six days, nor even in thirty, and if the concrete

temporarily located in Havana, writes as follows concerning the conditions, architecturally, as he finds them there: "The high rental of buildings in Cuba, of which there is constant complaint, is due

primarily to the fact that nearly all of the buildings are but one story in height. The owner of the property in order to get a proper revenue on his investment must charge exceedingly high rental for the single story.



HOUSE AT WASHINGTON, D. C.  
George O. Totten, Architect.  
Roofed with Edwin Bennett's Roofing Tile.



DETAILS EXECUTED IN TERRA COTTA FOR ST. CATHERINE'S R. C. CHURCH, SOMERVILLE, MASS.,  
BY ATLANTIC TERRA COTTA CO.  
Maginnis & Walsh, Architects.

them can be put in place before the concrete is dry, otherwise they will warp, especially the floors, to such an extent that they will have to be replaced.

"Much more could be said in contradiction, but time and space forbid it."



HOUSE AT FORT THOMAS, KY.  
Gordon Sheppard, Architect.  
Roofed with American "S" Tile, made by Cincinnati Roofing Tile and Terra Cotta Co.

#### BUILDING OPPORTUNITIES IN CUBA.

A CORRESPONDENT to THE BRICKBUILDER, now

If there were one or more additional stories to the building rents would be less. I believe that the people who will go into this project of putting up some double apartment houses in Cuba will derive rich returns within a few years. The conditions of the country warrant improvements in the building line;—real estate is in good shape.



THE ROBERTSON APARTMENT, CINCINNATI, OHIO.  
Joseph Steinkamp & Brother, Architects.  
Built of Shawnee Brick, made by Ohio Mining and Manufacturing Co.



New building construction is going on in every direction. Artisans and workmen of all kinds are fully employed. The average house and commercial building of the Cuban is simple in detail, but numerous additions have been made since the original structures were put up, and piecing out has added to the intricate arrangement. The poorer classes are crowded together in the queer Cuban combination apartment houses. These light structures are constructed with a view to acquiring as much room as possible for a large number of people. The building itself is usually a large oblong affair with quite a liberal size court in the center. On either side of this court are the several apartments. Often only one room is possessed by a family and frequently these families have a large number of children. This crowded condition is to be deplored but cannot be avoided so long as better and more roomy apartments cannot be had at equal prices. As practically all of these structures are but one story there is not a very large number of people to the acre after all. Cuba is waiting for some one with enough enterprise to come here and put up roomy structures for the rich and for the poor which can be rented or sold at reasonable prices. Rents have doubled since the American occupation, due to the fact that there is a greater demand for houses. As to building materials, the Cuban brick is not up to date in any respect but can be used if required. It is larger than the American type and cruder in every way. Nearly all of the brick buildings are cemented over so that the appearance of the brick facing does not matter very much. Considerable lumber is imported from America, but prices necessarily rule high, due to the cost of transportation. Builders' hardware is another item which adds to the expense of building here. Skilled and unskilled workmen are to be had in plenty, and there are many native artisans. Wages average about even with those paid in America, if anything a little lower."



DETAIL BY R. H. HUNT, ARCHITECT.  
American Terra Cotta Co., Makers.

#### ROTCH TRAVELING SCHOLARSHIP EXAMINATIONS.

THE examinations for the Rotch Traveling Scholar-



CHURCH OF ST. ALOYSIUS, JERSEY CITY, N. J.  
Charles Edwards, Architect.  
The 200 tons of Architectural Terra Cotta used in this building were supplied by the New York Architectural Terra Cotta Co.



DETAIL FOR MARYLAND HOTEL, ST. LOUIS.  
A. B. Groves, Architect.  
Winkle Terra Cotta Co., Makers.



DETAIL BY NEW JERSEY TERRA COTTA CO.  
L. A. Goldstone, Architect.

ship will be held in Boston beginning April 13. Anyone who has been employed during two years in professional work in the Massachusetts office of an architect resident in the state is eligible for the competition. Preliminary examinations are held in History of Architecture, Construction, French, and Drawing from the East. Graduates from a regularly accredited architectural school may present their diplomas in lieu of these examinations. Those who are successful in the preliminary examinations will be admitted to the final competition in Design upon which the award will be made. The successful candidate receives \$1,000 per year for two years, to be expended in study and travel abroad. Further details may be obtained upon application to C. H. Blackall, Secretary, 20 Beacon Street, Boston.

#### BUILDING OPERATIONS FOR FEBRUARY.

WHILE the building depression incident to the recent currency stringency, which shortened the supply of money for building operations and also developed a waiting policy, still continues, there is an improvement in some quarters, which contains much of encouragement. Official reports from some fifty cities received by *The American Contractor*, New York, and tabulated, show a total falling off of 33 per cent, or practically one-third, as compared with the operations of February, 1907. The loss, amounting to about fourteen million dollars, is nearly accounted for in the decrease in New York and San Francisco, amounting to more than twelve million dollars. Chicago holds up remarkably, showing a gain of 9 per cent, while the total value of permits issued is but little more than a million dollars less than those issued in Greater New York.

Among the other cities showing gains are the following: Bridgeport, 39; Cincinnati, 29; Denver, 18; Milwaukee, 87; Minneapolis, 33; Omaha, 6; Philadelphia, 27; Paterson, 61; St. Louis, 9; Spokane, 149; Syracuse, 140; Salt Lake City, 63. The following figures show the percentage of loss in leading cities: Baltimore, 26; Buffalo, 20; Columbus, 53; Davenport, 61; Dallas, 42; Detroit, 61; Duluth, 26; Grand Rapids, 53; Hartford, 63; Indianapolis, 4;



DETAIL BY J. W. ROYER, ARCHITECT.  
Indianapolis Terra Cotta Co., Makers.

Kansas City, 11; Louisville, 9; Los Angeles, 46; Memphis, 44; Mobile, 42; New York, 59; Pittsburg, 25; Rochester, 55; St. Paul, 52; San Francisco, 66; Seattle, 50; Toledo, 30; Washington, 11.

#### MAIN DOME, WESTMORELAND COUNTY COURTHOUSE.

THIS dome is built of polychrome and gold enamel terra cotta, both inside and out. The outside, particularly in sunlight, is of unusual richness in tone. The inside is one of the most perfect examples of terra cotta construction ever produced. The lines, colors and gilding are ideal in all respects. The dome is weatherproof and will not sweat. The outside shell of the dome is constructed of steel, covered with cement, which in turn is covered by the terra cotta. The inside is a natural dome, built of terra cotta blocks without skeleton. The spandrels, cornices and arches below the dome proper on the inside are also built of terra cotta. The courthouse, of which William Kauffman is architect, is located at Greensburg, Pa. The terra cotta was executed by The Northwestern Terra Cotta Company.

#### ST. AMBROSE CHURCH, BROOKLYN.

GEORGE H. STRETON, ARCHITECT.

THE terra cotta decorations on the front of this building are of a character in accordance with the highest development of the use of this method of architectural treatment, both as to style and execution. The design has been carefully studied with the end in view of the adaptability of polychrome terra cotta for producing the desired architectural effects. The work has been kept mostly flat as to projections and relief, and the desired final results obtained by the rich colors of the terra cotta. Much of the ornament is very fine and rich and has been brought out by the use of three and sometimes four colors on a single piece. The figure panels (of which there are several), the ornamental corner pilasters and the main cornice are extremely rich in effect and are most successful as showing what can be accomplished by the proper employment of polychrome terra cotta. This building is sure to prove a stimulus in the matter of creating an increasing demand for this kind of material.



DETAIL BY SOUTH AMBOY TERRA COTTA CO. E. G. Southey, Architect.



ADMINISTRATION BUILDING, CITY HOSPITAL, ST. LOUIS. James A. Smith, Architect. Terra Cotta by St. Louis Terra Cotta Co.

at Rocky Hill, New Jersey.

#### NEW BOOK.

ANALYSIS OF MIXED PAINTS, COLOR PIGMENTS AND VARNISHES. By Clifford Dyer Holley, M. S., Ph. D., New York: John Wiley & Sons.

Each method given in this work has been tested out in the author's laboratory and its working value thoroughly demonstrated. The various analyses given are believed to be representative of the composition of the pigments they illustrate, and it is hoped that they will be of service in enabling the analyst to pass on paint products with fairness to both the manufacturer and the consumer.



JEWISH TEMPLE, COLUMBUS, OHIO. Jacob S. Goldsmith, Architect. Built of "Ironclay" Brick.

#### IN GENERAL.

W. R. B. Willcox, formerly of Burlington, Vt., and W. J. Sayward, until recently connected with the office of McKim, Mead & White, have formed a co-partnership for the practice of architecture and located at Seattle, Wash. Their offices are in the Arcade Annex.

J. F. Sheblessy, architect, formerly of Louisville, Ky., has formed a copartnership with S. E. Desjardins, under the firm name of Desjardins & Sheblessy, offices, Fourth National Bank Building, Cincinnati, Ohio.

#### SCHOOL OF ARCHITECTURE UNIVERSITY OF PENNSYLVANIA

**The Four Year Course.** Full professional training (with an option in Architectural Engineering) leading to the degree of B. S. in Architecture. Advanced standing is offered to college graduates or the two degrees of A. B. and B. S. in Architecture can be taken in six years.

**The Graduate Year** affords opportunity for advanced work in design and other subjects of the course leading to the degree of M. S., in Architecture.

**The Two Year Special Course.** For qualified draughtsmen. Offers advanced technical training with a Certificate of Proficiency.

**For Full Information** address Dr. J. H. Penniman, Dean of the College, University of Pennsylvania, Philadelphia.

**POSITION WANTED**—Architect, 28, University graduate, experienced in practical office work and superintendence, returning from foreign travel and study, wishes permanent engagement, with future prospects as superintendent of construction, practical business manager or representative with architect or construction company. Address University Graduate, care THE BRICKBUILDER.

**POSITION WANTED** by architectural draughtsman with special college training and ten years' office experience in designing and detail work in both the East and the West. Would like position where there is opportunity for advancement. Can furnish the best of references. Address "Indiana," In care of "THE BRICKBUILDER."







ST. AMBROSE R. C. CHURCH, TOMPKINS AVE., BROOKLYN, N. Y.  
GEORGE H. STREETON, ARCHITECT.

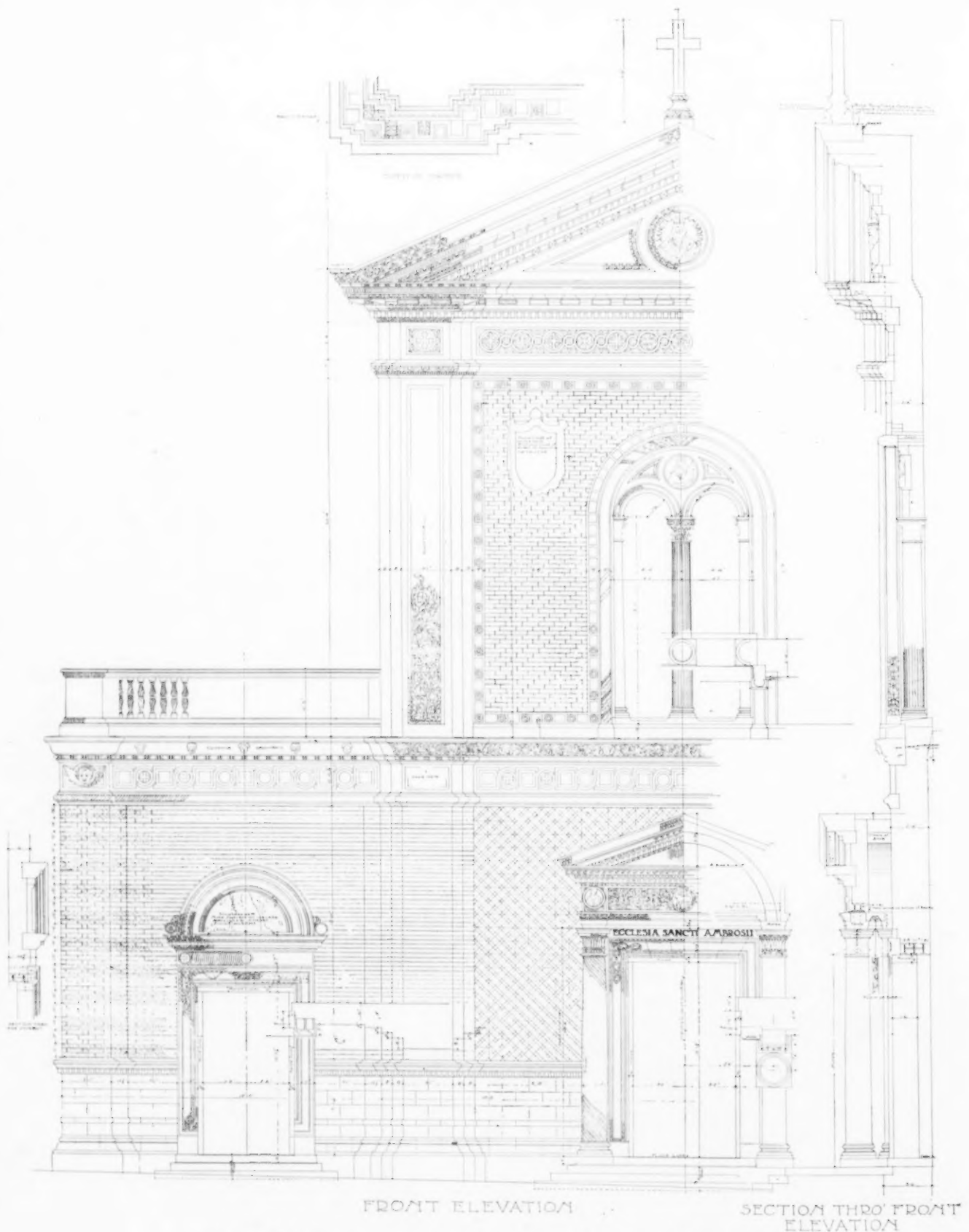




ST. AMBROSE R. C. CHURCH, TOMPKINS AVE., BROOKLYN, N. Y.  
GEORGE H. STREETON, ARCHITECT.







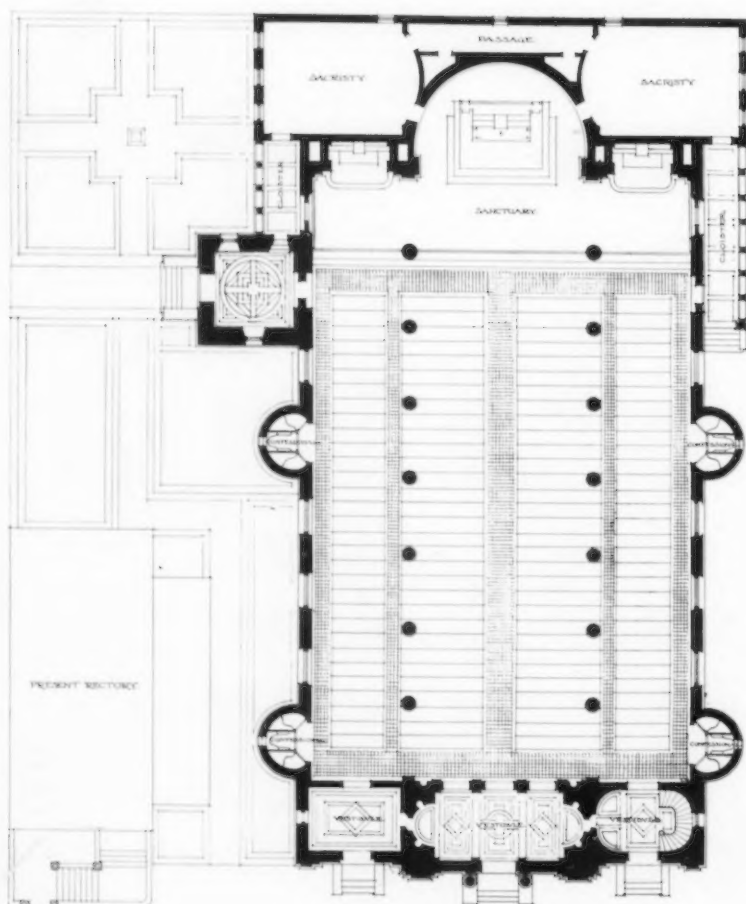
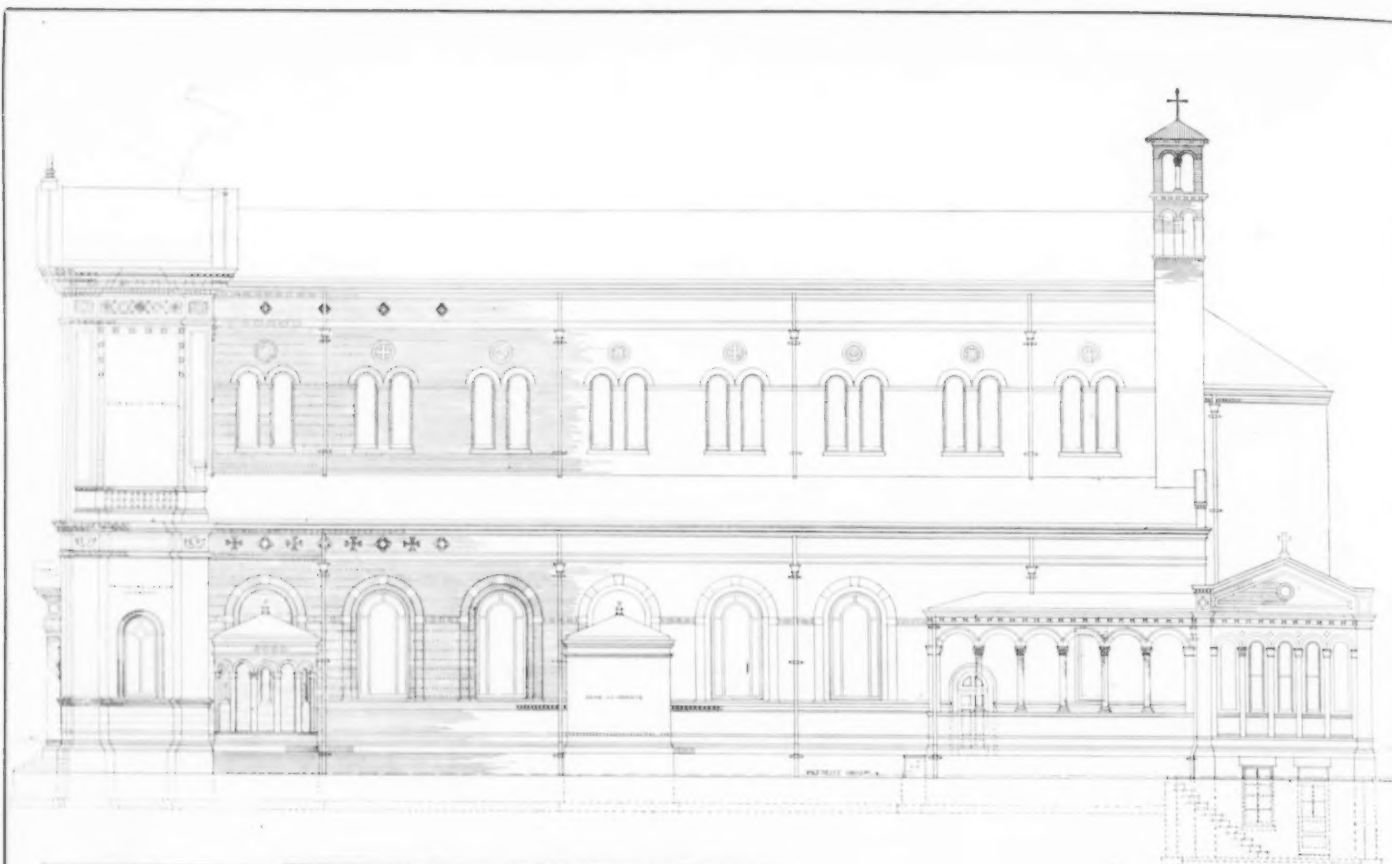
FRONT ELEVATION

SECTION THRO' FRONT ELEVATION

ST. AMBROSE R. C. CHURCH, TOMPKINS AVE., BROOKLYN, N. Y.  
GEORGE H. STREETON, ARCHITECT.







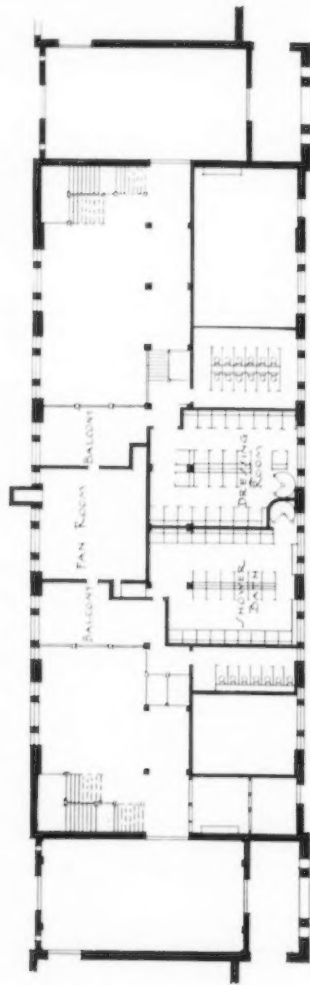
SIDE ELEVATION  
AND  
FIRST FLOOR PLAN,  
ST. AMBROSE R. C. CHURCH,  
BROOKLYN, N. Y.  
GEORGE H. STREETON,  
ARCHITECT.

PLAN OF ST AMBROSE R.C CHURCH  
BORO OF BROOKLYN N.Y.C.  
SCALE 1/4" = 1'-0"

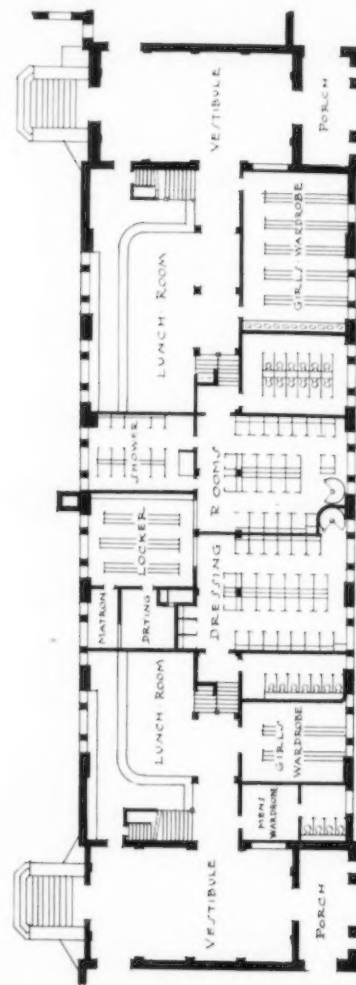




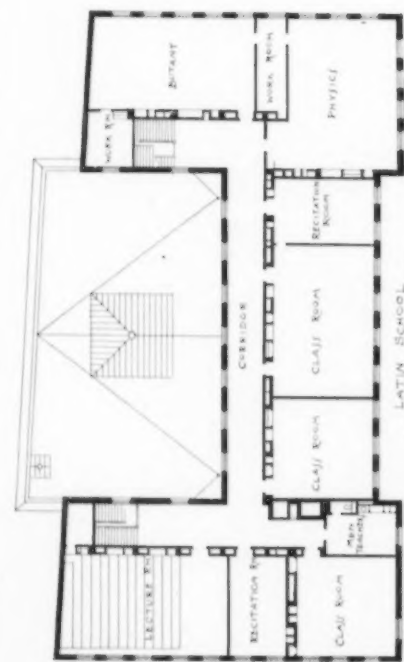
COMMON BUILDING.  
GYMNASIUM FLOOR PLAN.



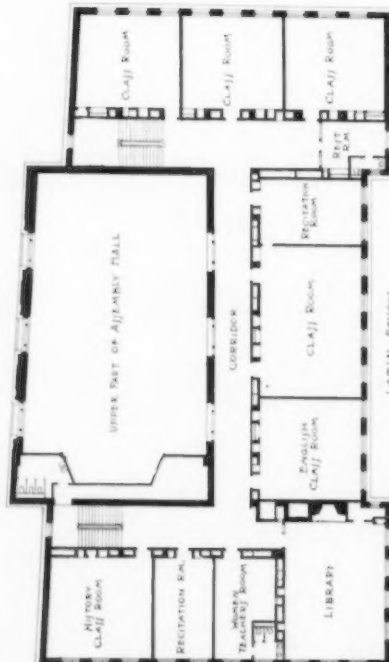
COMMON BUILDING.  
MEZZANINE FLOOR PLAN.



COMMON BUILDING.  
FIRST FLOOR PLAN.



LATIN SCHOOL.  
THIRD FLOOR PLAN.



LATIN SCHOOL.  
SECOND FLOOR PLAN.

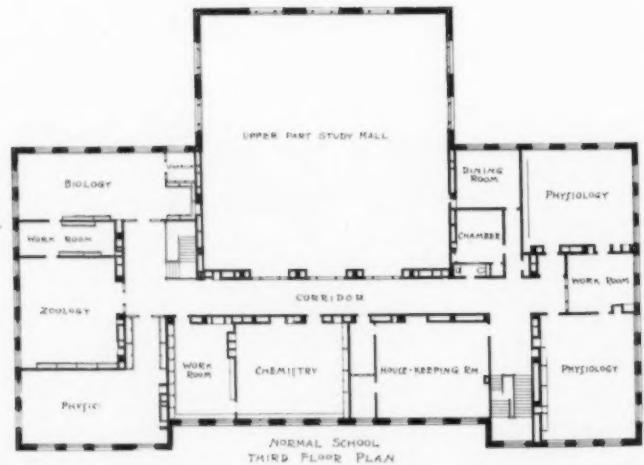
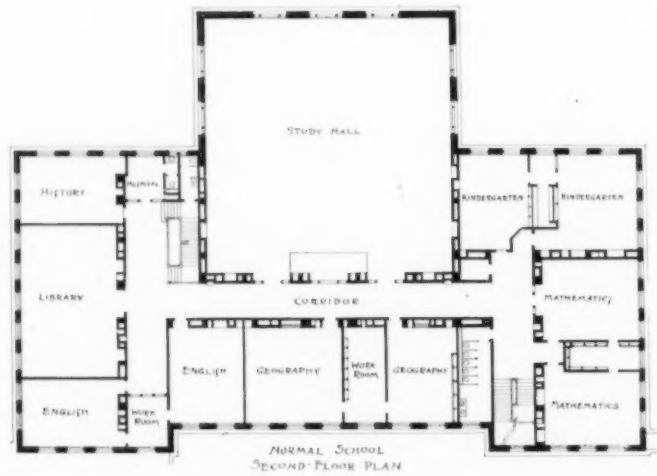
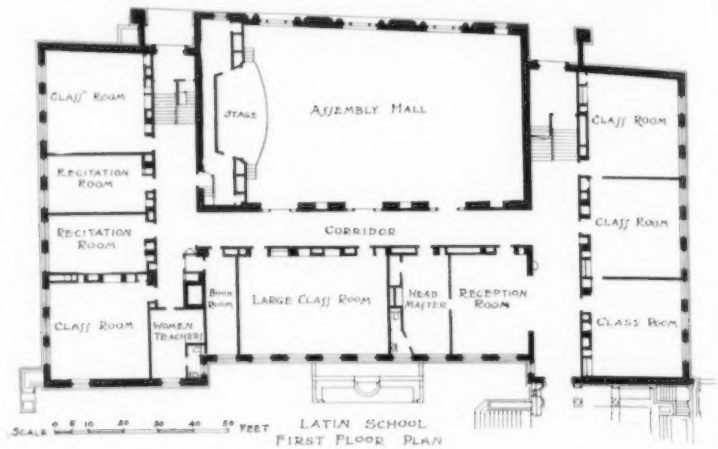
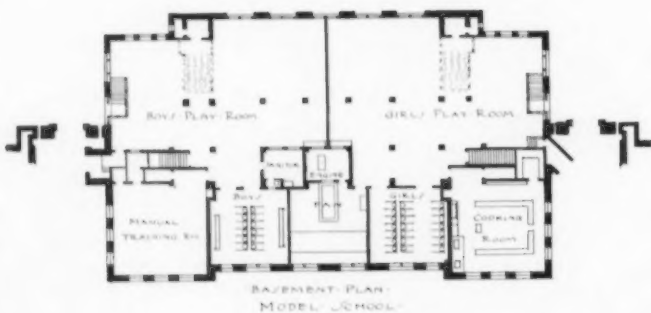
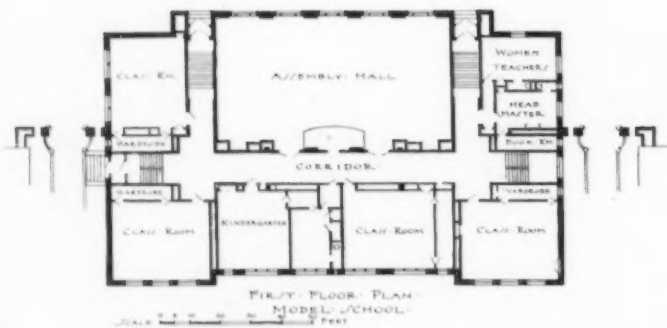
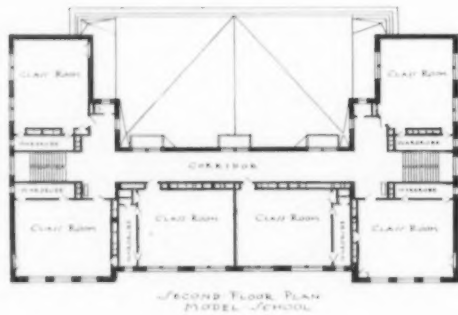
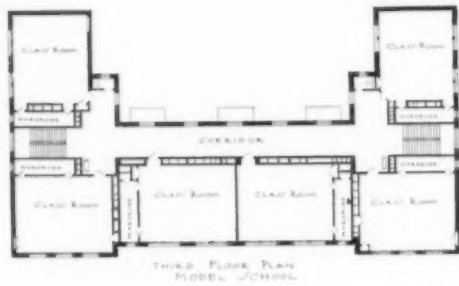


NORMAL SCHOOL.  
FIRST FLOOR PLAN.

PLANS, NORMAL AND LATIN SCHOOL GROUP, BACK BAY FENS, BOSTON.  
PEABODY & STEARNS, MAGINNIS, WALSH & SULLIVAN, COOLIDGE & CARLSON, ASSOCIATED, ARCHITECTS.



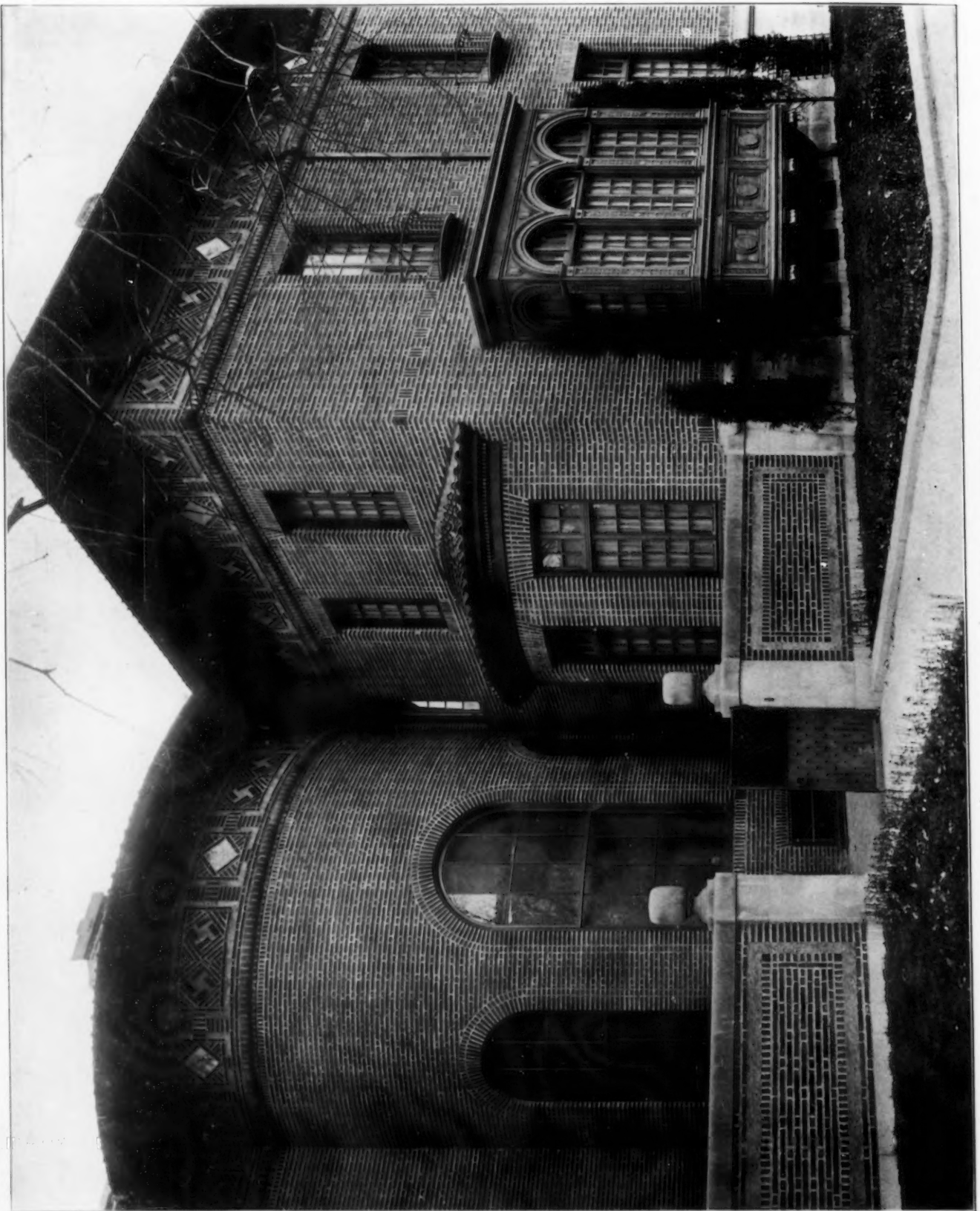




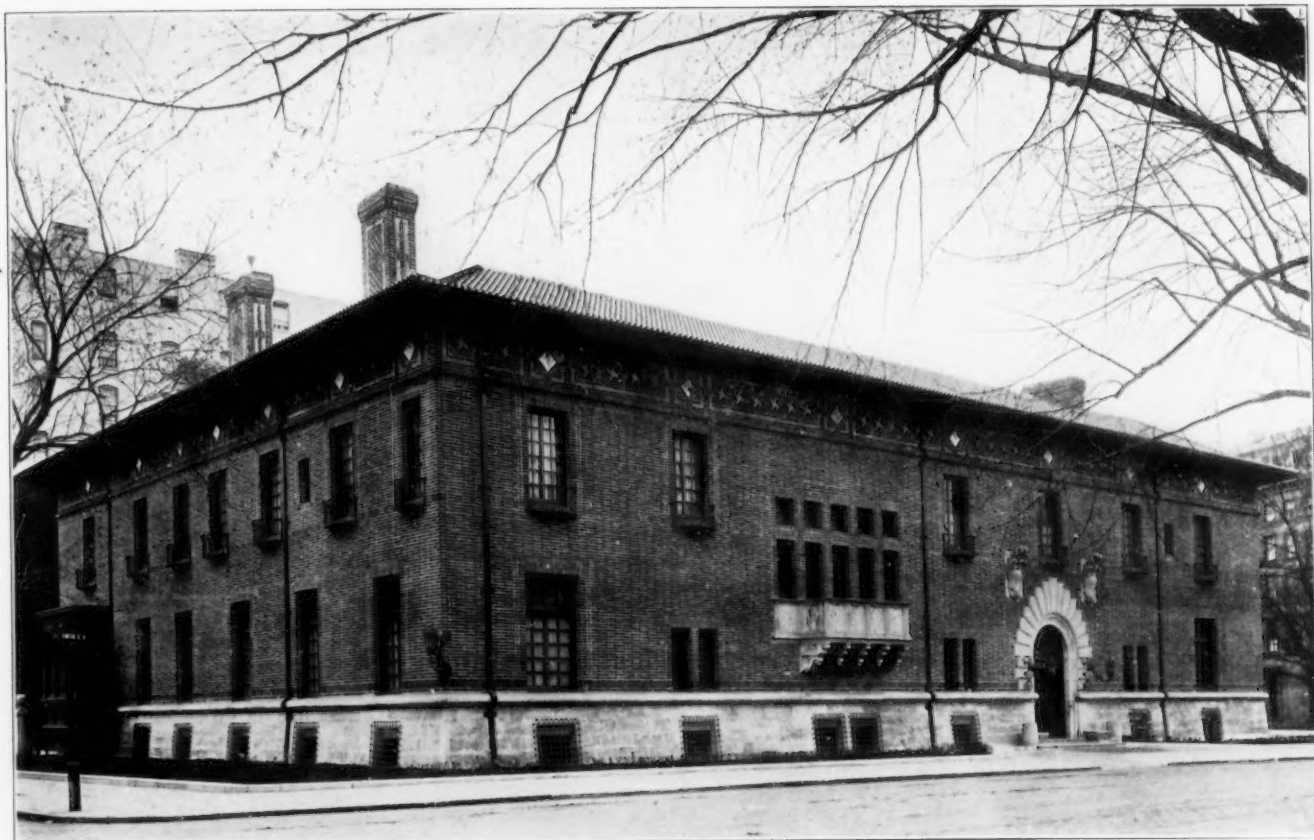
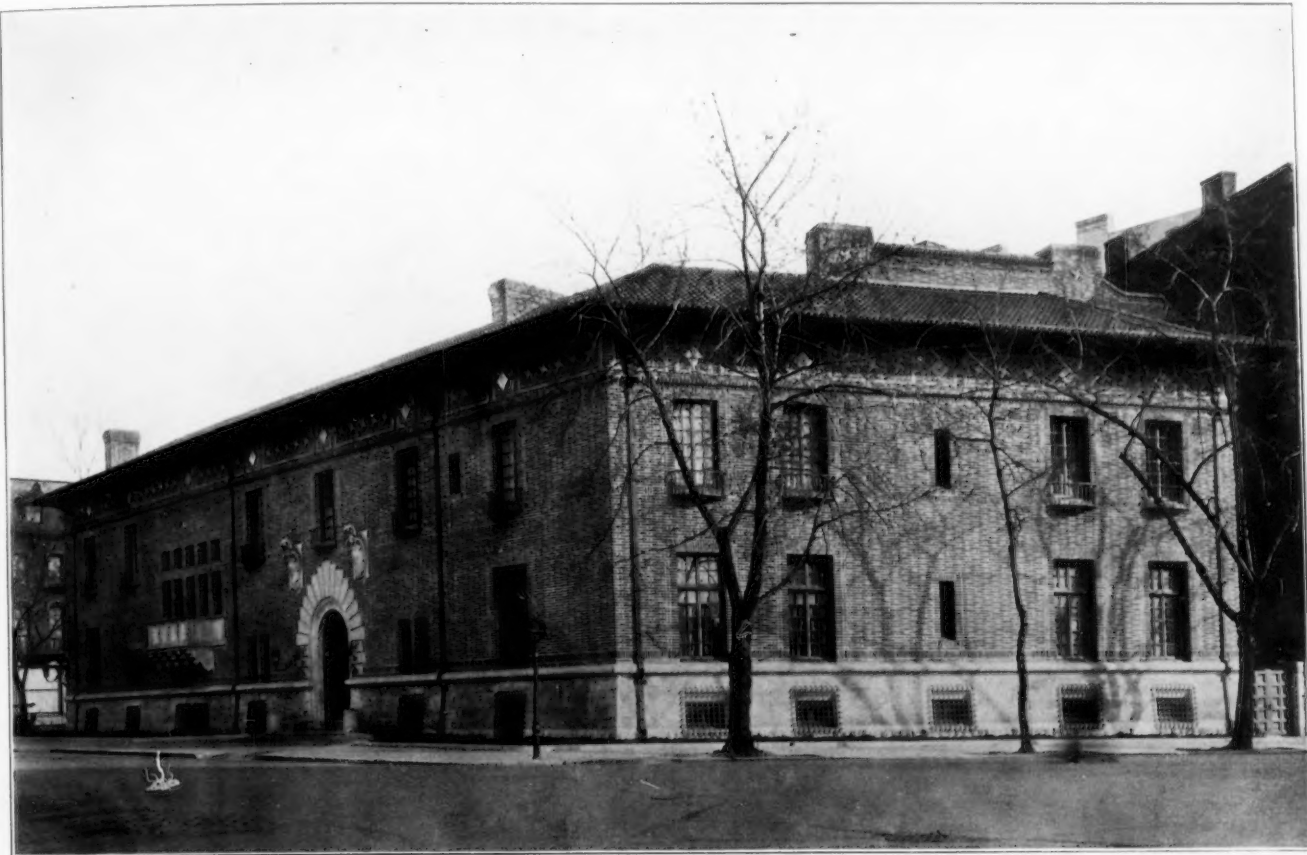
PLANS, NORMAL AND LATIN SCHOOL GROUP, BACK BAY FENS, BOSTON.  
PEABODY & STEARNS, MAGINNIS, WALSH & SULLIVAN, COOLIDGE & CARLSON, ASSOCIATED, ARCHITECTS.







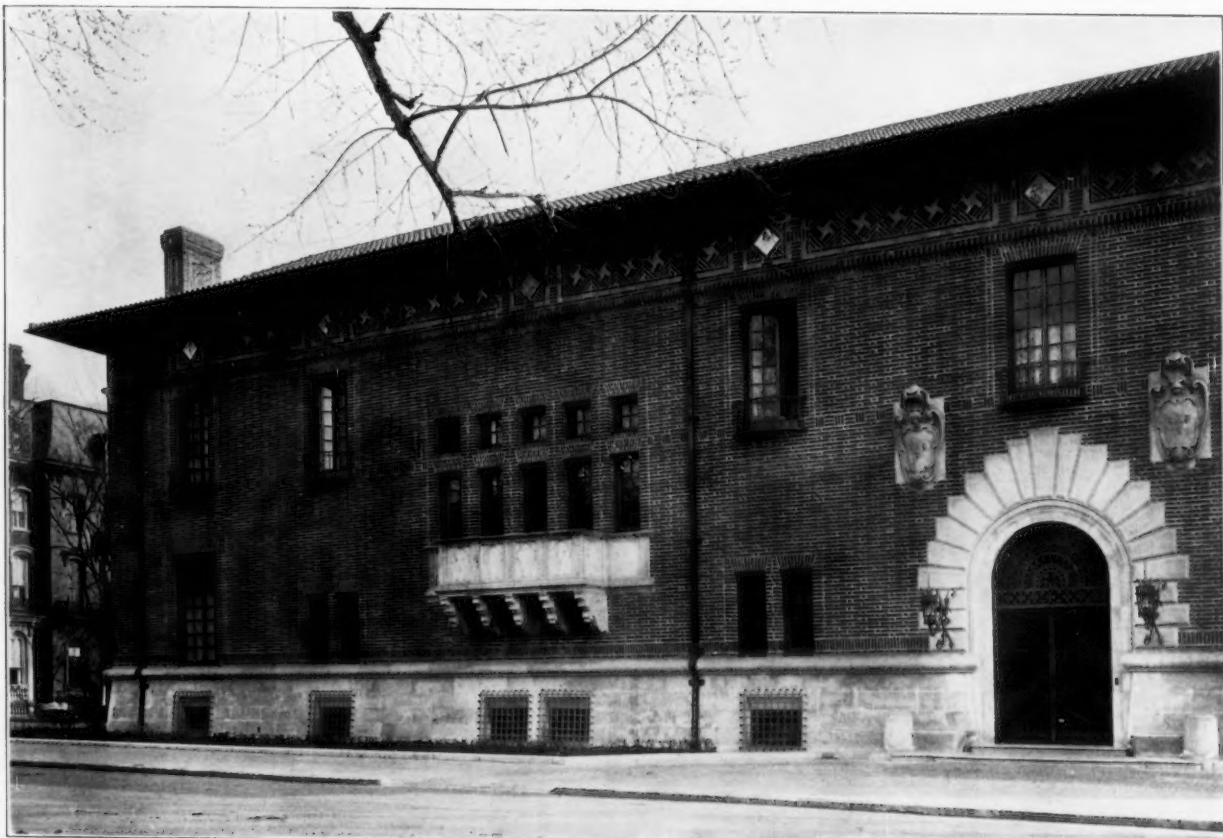
HOUSE FOR JOHN R. MCLEAN, ESQ., WASHINGTON, D. C.  
JOHN RUSSELL POPE, ARCHITECT.



HOUSE FOR JOHN R. McLEAN, ESQ., WASHINGTON, D. C.  
JOHN RUSSELL POPE, ARCHITECT.

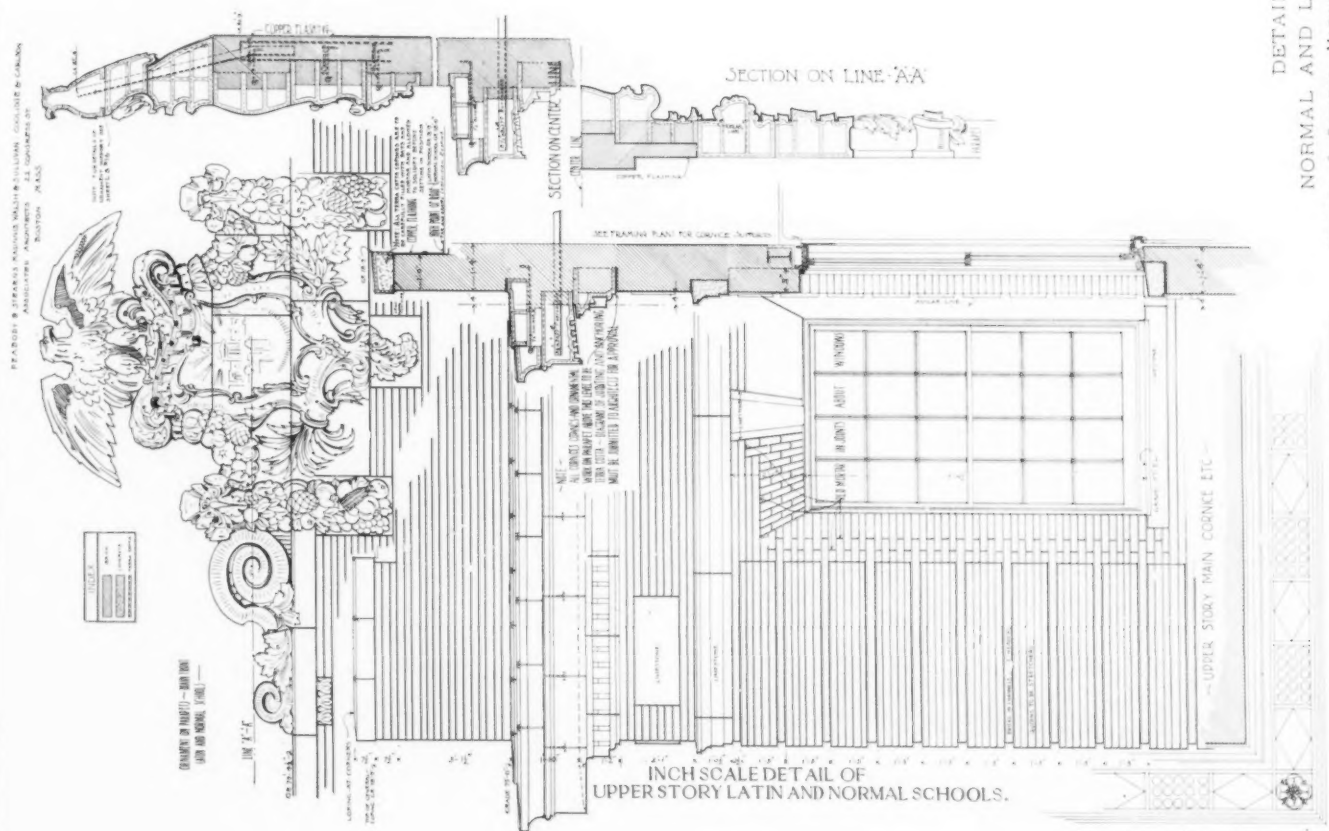
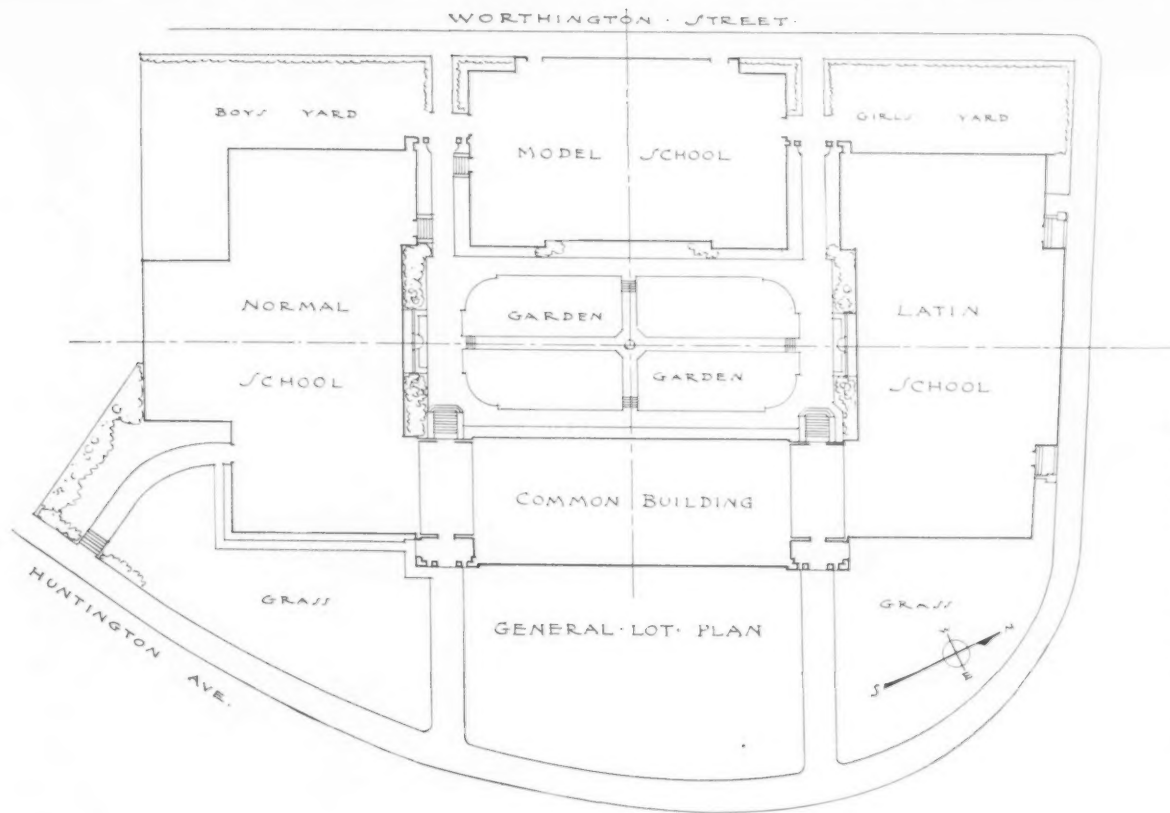






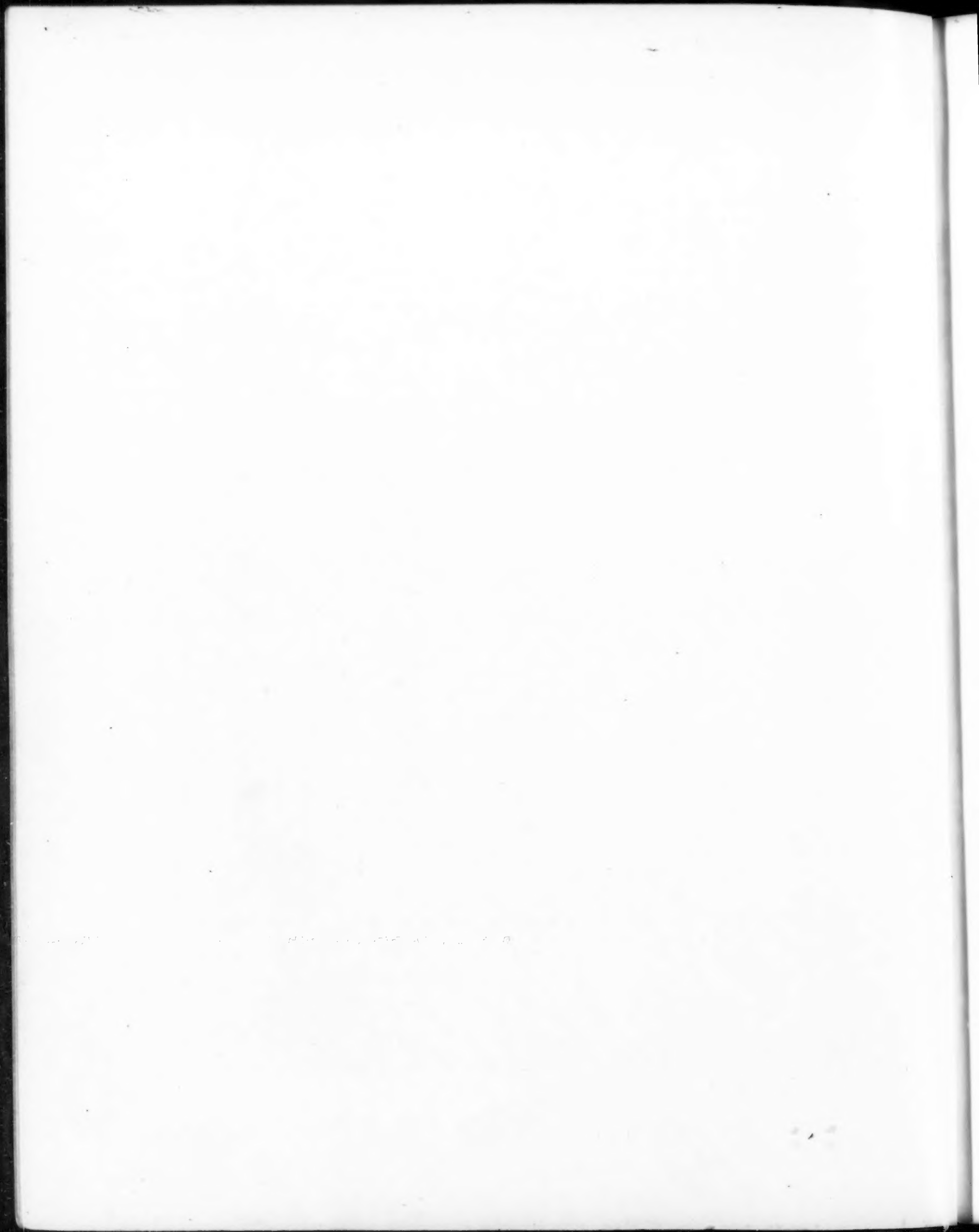
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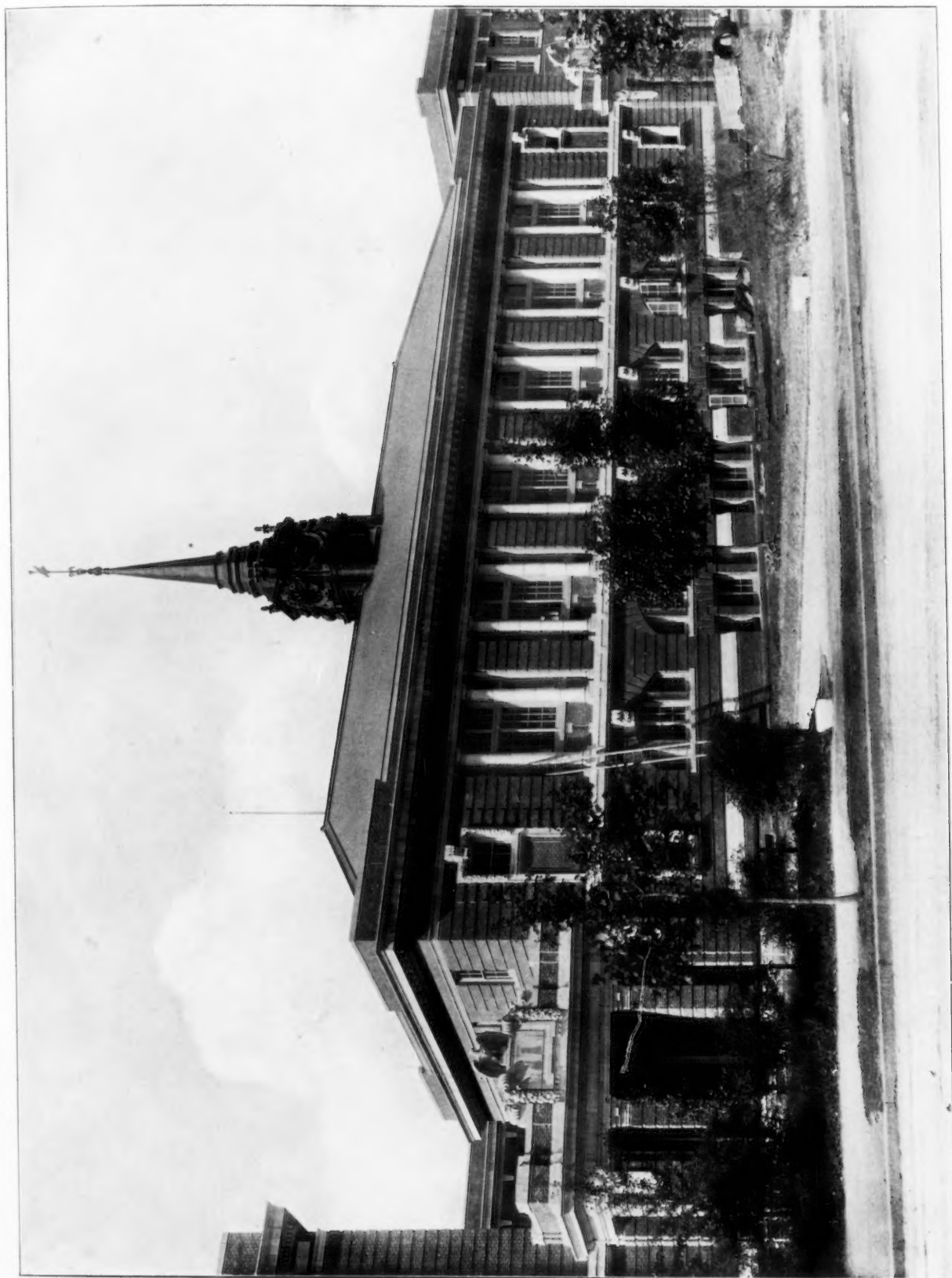




DETAIL OF UPPER STORY AND BLOCK PLAN.  
NORMAL AND LATIN SCHOOL GROUP, BACK BAY FENS, BOSTON.  
PEABODY & STEARNS, MAGINNIS, WALSH & SULLIVAN, COOLIDGE & CARLSON, ASSOCIATED, ARCHITECTS.







NORMAL AND LATIN SCHOOL GROUP, BACK BAY FENS, BOSTON.  
PEABODY & STEARNS, MAGINNIS, WALSH & SULLIVAN, COOLIDGE & CARLSON, ASSOCIATED, ARCHITECTS.

THE ...

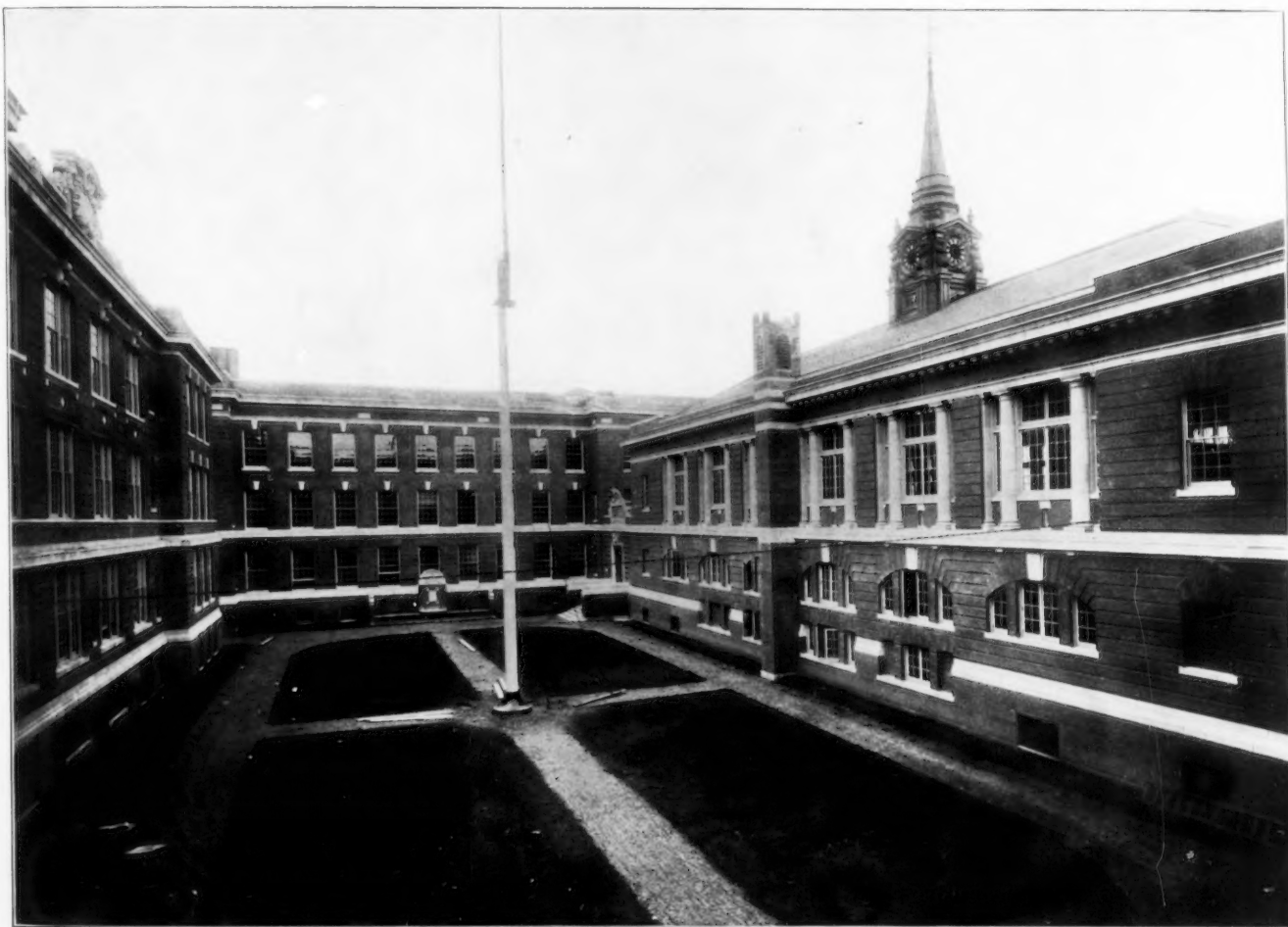
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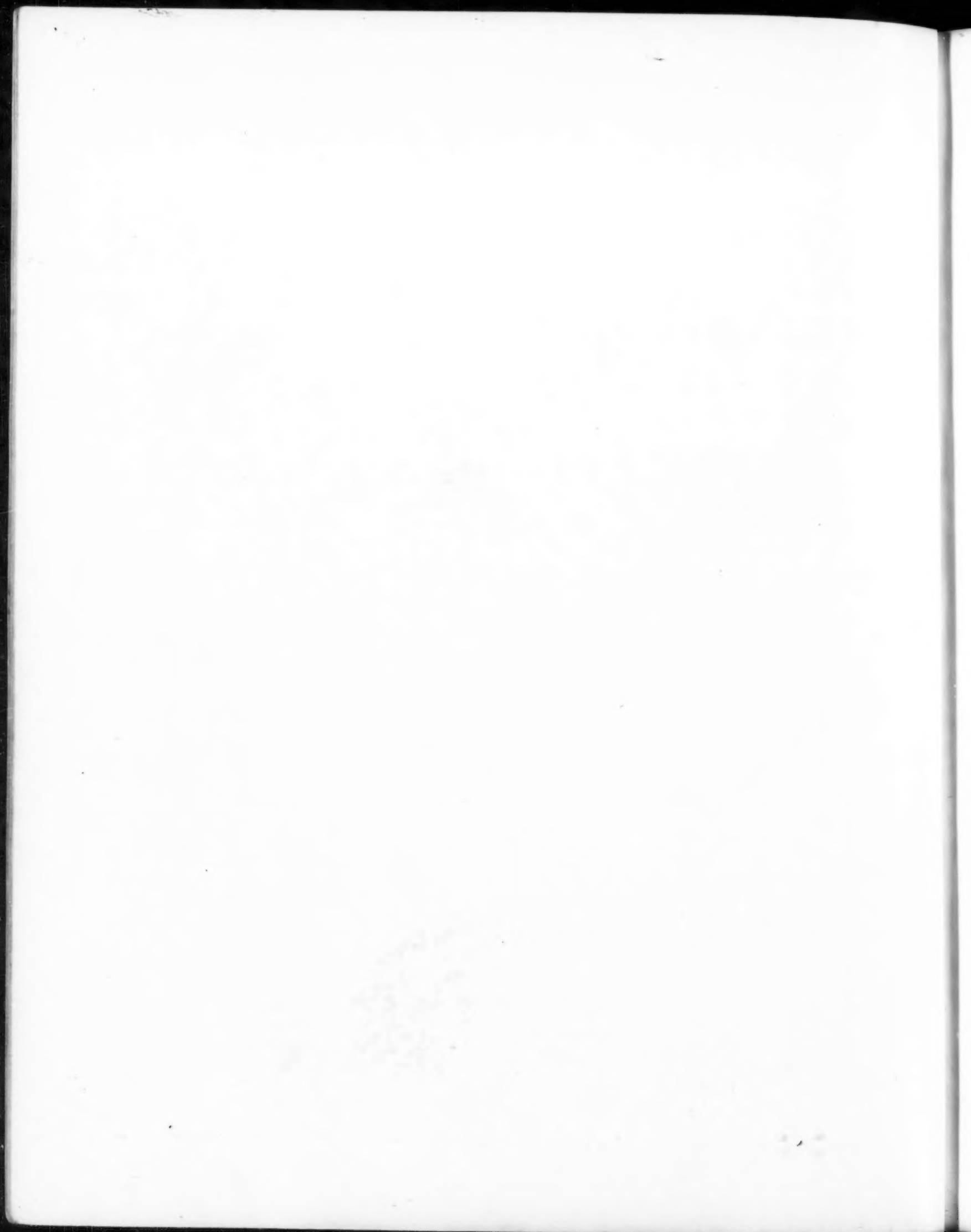
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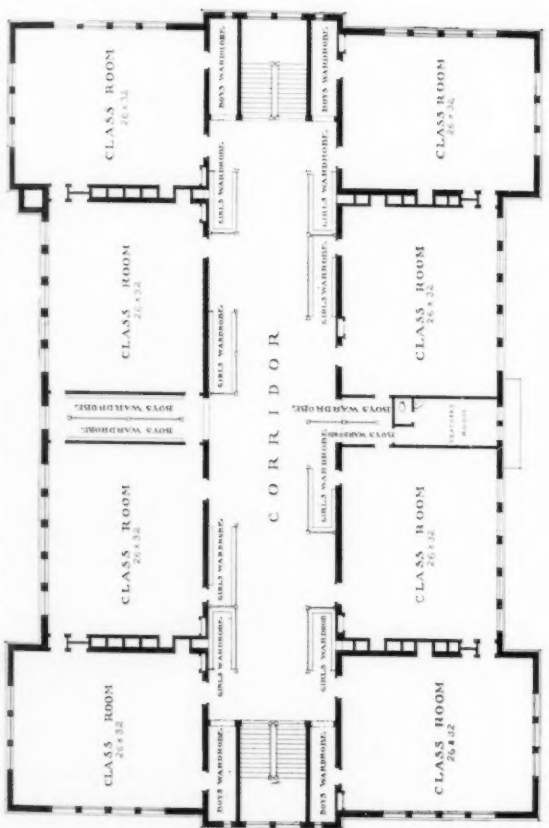
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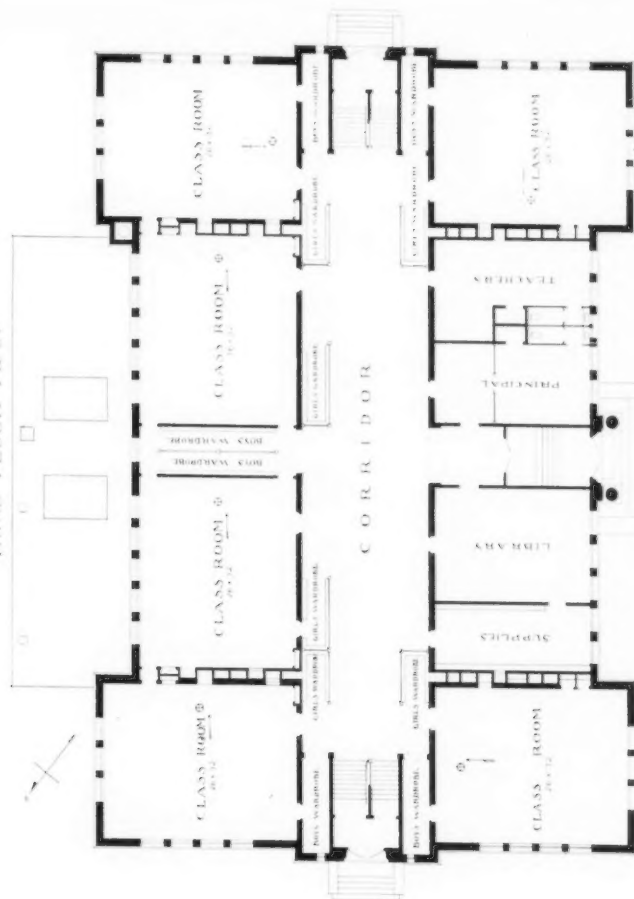


NORMAL AND LATIN SCHOOL GROUP. BACK BAY FENS, BOSTON.  
PEABODY & STEARNS, MAGINNIS, WALSH & SULLIVAN, COOLIDGE & CARLSON, ASSOCIATED, ARCHITECTS

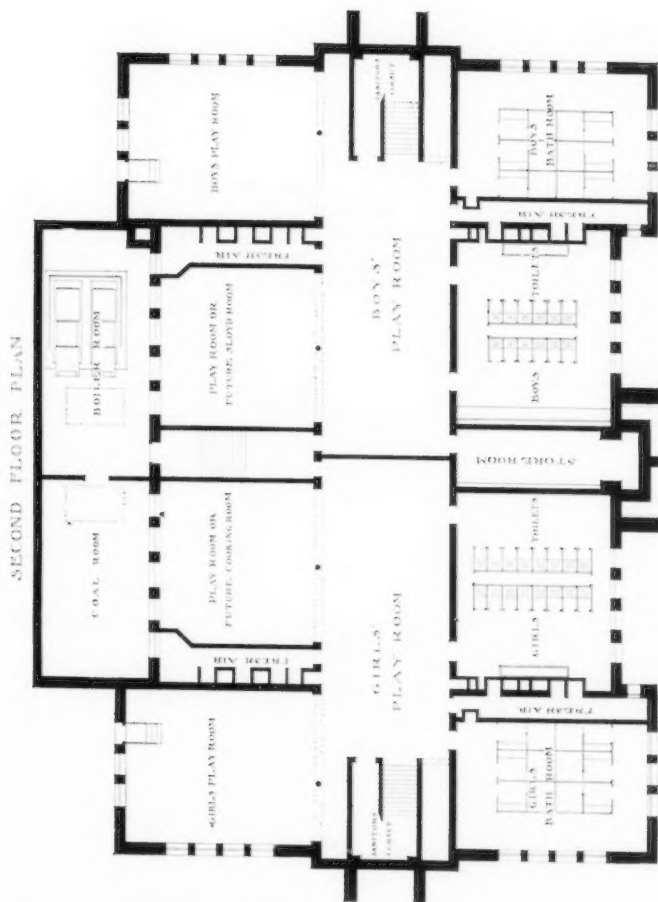




THIRD FLOOR PLAN



FIRST FLOOR PLAN



BASEMENT • FLOOR • PLAN

CHARLES A. DANIELS SCHOOL, MALDEN, MASS.  
BRainerd & Leeds, Architects.

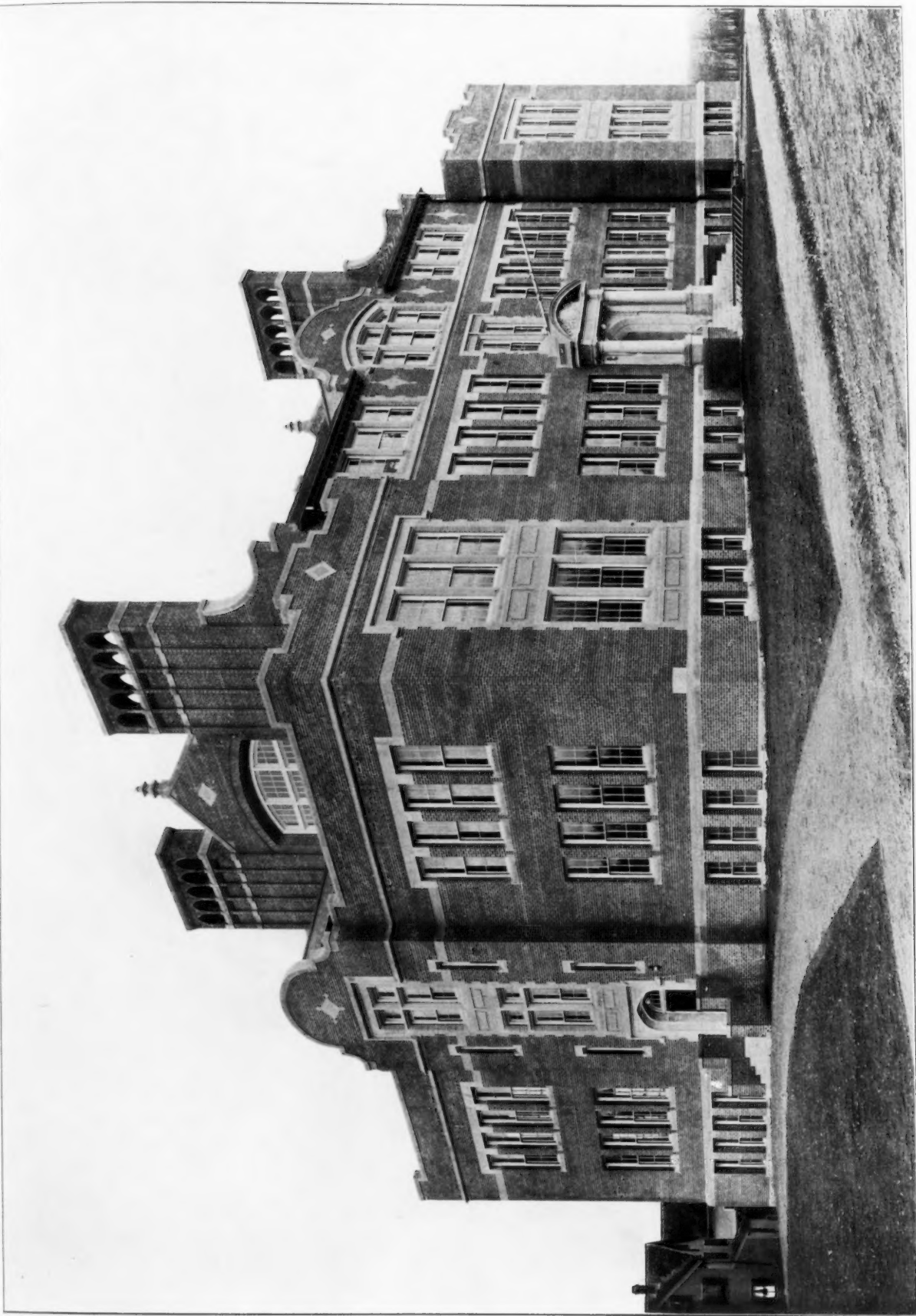




THE BRICKBUILDER.

VOL. 17, NO. 3.

PLATE 44.



CHARLES A. DANIELS SCHOOL, MALDEN, MASS.  
BRainerd & LEEDS, ARCHITECTS.